

World Maritime University

# The Maritime Commons: Digital Repository of the World Maritime University

---

World Maritime University Dissertations

Dissertations

---

1986

## Container terminal activities of the port of Tanjung Priok

Hamid Hasan  
*WMU*

Follow this and additional works at: [https://commons.wmu.se/all\\_dissertations](https://commons.wmu.se/all_dissertations)

---

### Recommended Citation

Hasan, Hamid, "Container terminal activities of the port of Tanjung Priok" (1986). *World Maritime University Dissertations*. 778.

[https://commons.wmu.se/all\\_dissertations/778](https://commons.wmu.se/all_dissertations/778)

This Dissertation is brought to you courtesy of Maritime Commons. Open Access items may be downloaded for non-commercial, fair use academic purposes. No items may be hosted on another server or web site without express written permission from the World Maritime University. For more information, please contact [library@wmu.se](mailto:library@wmu.se).

CONTAINER TERMINAL ACTIVITIES  
OF THE PORT OF TANJUNG PRIOK,  
JAKARTA

WMU LIBRARY

By :  
*Hamid Hasan*

THE WORLD MARITIME UNIVERSITY  
MALMO - SWEDEN

WORLD MARITIME UNIVERSITY  
MALMO - SWEDEN

CONTAINER TERMINAL ACTIVITIES  
OF THE PORT OF TANJUNG PRIOK.  
JAKARTA

By:  
HAMID HASAN  
INDONESIA

A paper submitted to the Faculty of the World Maritime University in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE  
in  
GENERAL MARITIME ADMINISTRATION

The contents of this paper reflect my personal views and are not necessarily endorsed by the University

Signature :



Date : 20th November 1986

Supervised and assessed by: Professor Aage Os



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the Name of Allah, the  
Beneficent, The Merciful

## TABLE OF CONTENTS

	Pages
ACKNOWLEDGMENTS.....	iii
CHAPTER I INTRODUCTION.....	1
CHAPTER II THE BRIEF HISTORY OF CONTAINERISATION.	7
CHAPTER III CONTAINERS SPECIFICATIONS.....	15
3.1 Definition.....	15
3.2 Types and Dimensions of Containers....	17
3.3 Design and Manufacture.....	18
3.4 Markings on Containers.....	21
CHAPTER IV PORT OF TANJUNG PRIOK.....	38
4.1 The History of The Port of Tanjung Priok.....	38
4.2 The Features of The Port of Tanjung Priok.....	41
4.3 The Position of Tanjung Priok in the National and International Commercial Network.....	48
4.4 Government Policy Concerning Containerisation.....	51
4.5 The Objectives of Containerisation....	54

CHAPTER	V	THE CONTAINER TERMINAL UNIT OF THE PORT OF TANJUNG PRIOK AND ITS ACTIVITIES.....	59
	5.1	Introduction.....	59
	5.2	Management.....	62
	5.3	Operations.....	63
	5.4	Export Cycle.....	66
	5.5	Export via CFS.....	67
	5.6	Import Cycle.....	69
CHAPTER	VI	THE ADVANTAGES AND DISADVANTAGES OF CONTAINERISATION.....	70
	6.1	The Advantages of Containerisation...	70
	6.2	The Disadvantages of Containerisation	73
	6.3	The Advantages and Disadvantages of Containerisation in Indonesia.....	76
CHAPTER	VII	CONCLUSION AND RECOMMENDATIONS.....	81
APPENDICES :			
	1.	Map of the Port of Tanjung Priok.....	86
	2.	Pictures of Container Handling Facilities at the Container Terminal Unit ( CTU ).....	87
BIBLIOGRAPHY		.....	90

## ACKNOWLEDGEMENTS

*I would like to express my special gratitude to Professor Aage Os, course professor for his able guidance and assistance during preparation of this thesis, and also during my two years tenure in the World Maritime University.*

*I would also like to express my gratitude to all the permanent professors and visiting professors of the University from whom I obtained the knowledge. Also my gratitude to the teachers in the English programme, especially to Clive Cole for his linguistic support and supervision during the editing of this thesis, and also many thanks to all my friends who have assisted me throughout.*

*I wish to offer my gratitude to the respected Col. Chairuddin Lubis, Director of the Indonesian Coast Guard for his support and encouragement, and to Capt. N. Naamin, Head of the Container Terminal Unit for his assistance in my research and data collecting in the Container Terminal Unit of the Port of Tanjung Priok.*

*Lastly, but nevertheless not least, I wish to sincerely thank my mother and the members of my family, for their continuous encouragement and inspiration throughout my studies in Malmo, Sweden.*

*Malmo, November, 1986*

*Hamid Hasan*

## CHAPTER I

### INTRODUCTION

Containerisation is the modern contribution to the historic trend of diminishing transport costs and is therefore irresistible. It is by its repercussions outside technology much more than almost as profound a technological change in the carriage of general cargo as that from sail to steam. The mechanisation it implies will further decrease the burden of man's routine and controlling work, increasing safety and efficiency.<sup>1)</sup>

One of the advantages offered by a fully containerised transport system is the ability to load and unload cargo of various types and sizes encased in standard-sized containers, thus avoiding the necessity of handling many small packages one at a time during loading and unloading. Vessels can therefore be turned round more rapidly and savings will occur not only to the shipping companies through less time being spent in the port but also to all those parties involved in the handling and movement of cargo between the dock and point of origin or consumption.<sup>2)</sup>

The container brings with it possibilities for improving international trade. Consequently beside it being accepted in the developed countries like United State of America (USA), United Kingdom (UK), France, Germany, Belgium, Netherlands, Canada and so on, more and more developing countries are investigating the possibility of establishing container systems.



Every country wanting to establish or to continue its participation in the international shipping industry has no other choice than to establish its own container system. Therefore many developing countries have already established their own container systems like Brazil, Argentina, Egypt, Pakistan, India, Korea, Philippines, Indonesia etcetera.

In Indonesia the method of transportation utilizing containers was for the first time known at the beginning of the 1970s when container vessels began calling at the port of Tanjung Priok.

In world trade, Indonesia has a good geographical position because it is the world's largest archipelago extending between two continents, Asia and Australia and two oceans, the Indian Ocean and the Pacific Ocean. (see map p. 5 ). Its location across important trade routes has long influenced its political and economic development. The territory of Indonesia comprises 13,677 islands. The five main islands are Sumatra, Java, Kalimantan (Borneo), Sulawesi (Celebes) and Irian Jaya (The western part of New Guinea). The total population is an estimated 160 million. Furthermore, Indonesia has a large volume of foreign trade, and the type of commodities that it exports could mostly be classified as containerizable goods.

From the above mentioned it can be seen that Indonesia is an important junction for international sea traffic thus making Tanjung Priok more important in national and international trade.

The construction of the container terminal of the Port of

Tanjung Priok was commenced at the end of 1974. By the end of 1978 the part of the container terminal which was completed had to be put into operation because the flow of container goods was steadily growing. The container terminal has been fully operational since 1981. Furthermore, three other main ports of Indonesia namely Tanjung Perak (Surabaya), Makasar (Ujung Pandang) and Belawan (Medan) have been rehabilitated and fitted with adequate cargo handling equipment that can handle container boxes.

To accelerate the flow of goods from both directions (port to hinterland and vice versa), improvements both of the procedure and the system of services have been carried out by the Port Administration whereby an integrated service system was introduced. In this system all parties who are involved in container operations have been integrated under one umbrella operation. Thus all cargo documents are kept under one roof in which all parties such as shipowners, shippers, agents, consignees etcetera who are dealing with those particular cargoes, are able to complete documents and matters regarding their cargoes in as short a time as possible.

In Indonesia the container system has been seriously established now, whether or not it can succeed will further depend upon how and to what extent this system is developed. It will be also depend on the political consistency of the policy makers and the effort of the people who work with it. Until now the role of containerisation is still limited. The container services are only for international trade whereas they are still not very much used for domestic trade.

Talking about container services, we must not forget the

container terminal because it is the most important interface in a through transport chain and it is vital that it functions properly. The container terminal activities are really needed by all the parties such as shipowners, shippers, agents, consignees and so on. No importing goods could be unloaded and delivered without their activities, the goods would be delivered to the consignees through the several activities and the existing procedure, likewise vice versa i.e. for the exporting goods.

This thesis is divided into seven chapters :

- Chapter I is an introduction concerned with a general presentation.
- Chapter II is a brief history of containerisation.
- Chapter III is the container specifications.
- Chapter IV deals with the features and the history of the Port of Tanjung Priok and government policy concerning containerisation as well.
- Chapter V discusses the Container Terminal Unit of the Port of Tanjung Priok and its activities.
- Chapter VI deals with the advantages and disadvantages of containerisation in general and particularly in Indonesia.
- Finally , chapter VII presents the conclusion and recommendations, bringing an end to this paper.

# THE FAR EAST



*Footnotes*

-----

1. *G. Van Den Burg, Containerisation and Other Unit Transport, Hutchinson Benham, London, 1975, p. 7 (unnumbered).*
2. *J.R. Whittaker, AICS, Containerisation, second edition, Hemisphere Publishing Corporation, Washington London, 1975.*

## CHAPTER I I

### A BRIEF HISTORY OF CONTAINERISATION

The concept of unit load is one area of modern development in cargo handling which started in the late fourties and early fifties, in an effort to reduce costs, increase labour utilisation and to reduce of cargo handling. This involved the handling over of cargo from the factory or shippers warehouse to the carriers in palletised form to be handled mechanically. This improved the carriers safe handling and carriage of the cargo.

However, the idea for a demountable body for a vehicle was expressed by Dr. James Anderson in England in 1801. The April, 1911, issue of the National Geographic Magazine carried an advertisement showing a container 8 ft. high, 8ft. wide and 18 ft. long (2.438 m x 2.438 m x 5.48 m) being loaded aboard a ship by ships boom. The caption stated "Lift vans can be provided for immediate loading in any city in the United States, or in Europe".<sup>1)</sup>

In the USA containers were developed in the 1920s as a demountable body for a transport vehicle by both rail and trucking interests. By the early 1930s the New York Central Railroad and the L.C.L. corporation, a container maker in Delaware, owned 3900 merchandise containers and 8500 bulk material containers.<sup>2)</sup>

In decision No. 21723 dated April 14, 1931, the Intersta-

te Commerce Commission ruled that the economies of container transport could not be passed onto the consumer. This decision killed the incipient container movement in the United States for over 20 years.<sup>3)</sup>

Containerisation really started after the experiences obtained by the United States Army during World War II, when containers were used to speed up the transport of war material to the front in Europe.

After World War II the economies of developed countries were marked by the progress of mass production and mass consumption centring on consumer goods.

Not only the cargo handling costs were a large part of the total freight costs but also, the speed was slow. A system was required to accommodate the needs of distribution (convenience, speed, safety and low cost), whereby goods could be moved from manufacturer to final destination (the consumer) using a common carrying at low cost and less damage.

This concept was pursued by an American, Malcolm Mac Lean who, over a twenty year period, commencing in the mid-thirties, had built up one of the largest road haulage companies in the USA.

In 1955 MacLean sold his haulage business and purchased Waterman Steamship and its subsidiary, Pan Atlantic Steamship Company. Vessels belonging to the latter company were sold in order to finance the purchase of a number of oil tankers trading between New York and Huston. MacLean's initial intention was to carry cargo vans and chassis as complete units on the tankers. However, safe-

ty problems resulted in only the cargo vans being shipped.<sup>4)</sup>

The 26th April 1956 saw the tanker "Maxton" sail from Newark, New Jersey, with a load of 58 vans (containers) stowed on deck. After a year of trials the United States Coast Guard and the American Bureau of Shipping agreed to rules prescribing container and safety standards and in 1957 the first recorded container vessels in history, the "Gateway City", commenced operation. Container vans at that time measured 8' x 8'6 x 33', this being the largest size that trailers could carry at that time.<sup>5)</sup>

In 1958, Matson Navigation Company became the first steamship line to establish an integrated research department at top management level. The first major assignment of this new division was to develop the most modern, efficient and economical means of transporting cargo to and from Hawaii. No precedents were available and sources could assure the realisation of adopting planning. As almost all the transportation costs were incurred by handling and in addition were responsible for keeping the ships half of their time in ports, it became clear that first of all the loading and discharging activities along the haul route should be analysed and their expenditures reduced. Not only was it necessary for changes to be made technically in the equipment used, but also the existing organisation had to be remade. The changeover from one working system to another affected the whole line of operation. Independency was everywhere. Another big problem was how to overcome the fear of labour for mechanisation but a solution could be found by closely co-operating and bargaining with the unions before the most important plans could



become reality. The result was Matson's freight containerisation programme, which had revolutioned Pacific cargo carrying.

Matson's containerisation debut was made on August 31, 1958, when captain D. Brien sailed the Hawaiian Merchant from San Francisco Bay to Honolulu with 20 containers on deck. Conventional deck cranes were used to lift them, grossing up to 25 tons, from their lorries. The only deck phase lasted for almost two years. Several c-3 freighters were adapted. They could carry up to 75 containers 24 ft. long 8 ft. 6 in high and 8 ft. wide. The eight feet corresponded to the standard highway width in the United States. They could be lifted from the top corners only.<sup>6)</sup>

November 1959 was the start of the conversion of the freighter Hawaiian Citizen. Although this ship lost 24 % of its cubic capacity when converted to full container use, the loss of this space could be neutralised by the gain of time during the handling of its new containerised cargo. A deck mounted crane of a special structure made loading and unloading possible in one single day. This vessel was the first 100% containership in the Pacific when it made its maiden trip from San Francisco to Honolulu in May 1960. She carried 296 containers in her hull, stacked six high, in a honeycomb steel frame, and up to 140 on deck, or a total of 436.<sup>7)</sup>

In 1960 MacLean changed the operating name from Pan Atlantic Steamship Co. to Sea Land Services, thus reflecting the true nature of the new transport concept. With initial technical and regulatory problems solved, trading patterns expanded and in 1961 a regular container service

commenced between New York and Los Angeles/San Francisco.<sup>8)</sup>

By 1964 the Alaskan trade between Seattle and Anchorage was containerized and in 1966 the international container trade commenced with the Sea Land Service between the North Atlantic and Europe.<sup>9)</sup>

On April 23, 1966 Sea Land inaugurated weekly container-ship services to Europe with a special cargoship, the S.S. Fair Land, having 226 containers and three bulk-liquid containers filled with glycerine on board. These ships were equipped with travelling cranes which could load and unload at least 20 containers an hour.<sup>10)</sup>

On the North Atlantic, Sea Land inaugurated its record-breaking 14 days round trip weekly service with the first two completed SL-7s MacLean and Galloway in the summer of 1972. The six SL-7s which entered transpacific service in 1973 were conceived to perform two separate weekly service individually linking the northwest and southwest Pacific coasts of the US with Japan directly. Feeders connected the SL-7 crossing with Taiwan, Hongkong and SE Asia.<sup>11)</sup>

Overall world container traffic volumes increased five-fold over the period 1970 to 1982, rising rapidly from 47 million tonnes (mt) to over 280 million tonnes at an annual average of 16.2% per annum. While growth was sustained throughout the entire period of analysis, fluctuations are evident, the phenomenal 27% average annual increase in traffic volumes recorded between 1970 and 1974 being followed by a relative hiatus in 1975. With the adverse effects of the 1973 oil price

hike bottoming out thereafter, albeit at a somewhat slower pace, traffic rose at an annual average 12.3% over the period between 1976 and 1982.<sup>12)</sup>

World seaborne containerized traffic growth  
1970 / 1982 (million tonnes)

Year	Volume	Indexed
1970	47.3	100
1971	58.9	124
1972	77.0	163
1973	108.2	229
1974	123.7	262
1975	127.3	269
1976	158.1	334
1977	182.3	385
1978	214.7	454
1979	235.1	497
1980	255.5	540
1981	275.3	582
1982	286.8	606

Source : CSR Consultants Ltd.

### *Footnotes*

-----

1. *John R. Immer, Cargo Handling, Washington, p. 213.*
2. *Ibid.*
3. *Ibid.*
4. *United Nations Conference on Trade and Development (UNCTAD) and Antwerp Port Engineering and Consulting (APEC), Seminar on Container Management, Antwerp, Belgium, 19 September - 7 October 1983, August 1985 p. 3.*
5. *Ibid.*
6. *G. Van Den Burg, Containerisation A Modern Transport System.*
7. *Ibid.*
8. *United Nations Conference on Trade and Development (UNCTAD) and Antwerp Port Engineering and Consulting (APEC), Seminar on Container Management, Antwerp, Belgium 19 September - 7 October 1983, August 1985 p. 3.*
9. *Ibid.*
10. *G. Van Den Burg, Containerisation A Modern Transport System.*
11. *Sea Land Industries Investments, Brochure.*

12. *Leonard J. Goss CSR Consultant LTD, Containership  
Demand in the eighties, p. 25.*

## CHAPTER I I I

### CONTAINER SPECIFICATION

#### *3.1 Definition*

-----

The basis on which containers are built is international standardisation. Without international agreement on the basis of specifications and dimensions the container system could never have developed to its present level. The work of international standardisation in the field of freight containers is carried out by a technical committee of the International Standards Organisation.

According to the International Standards Organisation (ISO) the definition of a freight container is as follows :<sup>1)</sup>

A freight container is an article of transport equipment:

- a. of a permanent character and accordingly strong enough to be suitable for repeated use;
- b. specially designed to facilitate the carriage of goods, by one or more modes of transport, without intermediate reloading;
- c. fitted with devices permitting its ready handling, particularly its transfer from one mode of transport to another;

- d. so designed as to be easy to fill and empty;
- e. having an international volume of  $1 \text{ m}^3$  (35.3  $\text{ft}^3$ .) or more.

The term freight container includes neither vehicles nor conventional packing.

In November, 1978 the UNCTAD "Ad Hoc Inter-Government Group on Container Standards" held its second meeting in Geneva. The substance of the problem as developing countries see it is as follows :

- The need to strengthen developing country participation in ISO work by strengthening national standard bodies and related national groups such as container associations;
- The need for increased financial and technical assistance for this purpose;
- The right of developing countries to select, if necessary by regulations, the container configurations they consider best suited to their needs. In principle this would be from ISO standard series, but it was noted that the problem related not only to the non-ISO standards, but also to the large containers in some cases.
- The desirability for operators to refrain from bringing undue pressure to bear on developing countries to accept non-ISO containers;

- The need for stability in International container standards.<sup>2)</sup>

### *3.2 Types and Dimensions of Containers.*

---

Containers may be grouped under six principal types :

1. General Cargo Container :

A closed container with doors at one end, closed with sides and doors at one end, open-tops, open-sided, opentop open-sided, open-sided open-end, half height containers, ventilated (not insulated) container. Figures. 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12 show general cargo containers.

2. Thermal Container :

Insulated, refrigerated, and heated containers. (fig.3.1).

3. Tank Container :

Bulk liquid and Compressed gas (fig. 3.2).

4. Dry Bulk Container :

For gravity discharge and pressure discharge. (fig.3.4).

5. Platform Container :

Essentially "flats" without any superstructure, and not belonging to a fully automated container system since they cannot be top-lifted when loaded.

6. Special Container :

Cattle container, and collapsible containers.<sup>3)</sup>



The dimensions of containers are various but it is commonly held that containers are built in two sizes namely 20' and 40'. Nevertheless the Americans have their own system of 35', but generally it is 20' and 40' for the rest of the world. The specifications regarding the dimension of containers can be seen in figures 3.1 to 3.12.

### *3.3 Design and Manufacture.*

---

"Containers are built for abuse, not for use" is an international faked statement but excused by its motive. The truism is that containers must protect their varying contents against any damages intermodal transport can cause. Containers should therefore be of robust construction, resistant to denting, abrasion, bulging out and wedging when stacked in the holds of ships and have ample strength to repeatedly endure transport and handling by different kinds of equipment.

The basic design requirements of containers can be found in the International Standards Organisation (ISO) Draft Recommendation No. 1496, "Specification and Testing of Series 1 Freight Containers". The recommendation leaves the manufacturers ample freedom to individualise on design details and choice of materials. In order to make sure that a container has been produced up to the standard, it has to be proved that its structural calculations are correct and that it can withstand strength testing. Because of this reason, classification societies, engaged in the certification of containers granted on the basis of conformity to an approved type, have established very strict regulations and procedures,

mostly based on ISO recommendations.

There are three categories of materials used to fabricate containers, namely plywood/fiberglass, aluminium and steel.

1. Plywood/Fiberglass :

Fiberglass reinforced plywood as a material is easy to maintain and does not corrode. For the most part, the containers are not cost effective to repair and besides they incur a lot of damage.

2. Aluminium :

Aluminium is lightweight and has a relatively superior corrosion resistance. It can absorb energy in deformation, thus localising damage. Furthermore, it is reflective, has a low level of heat emissivity, is not liable to break at low temperatures, is non-toxic, and has comparatively high scrap value. It is a strong attractive material, not too difficult to work with. Lightweight, relatively non-corrosive containers can be built for several purposes and with the advantages of allowing for an increased payload by reducing dead-weight total weight limits. Nevertheless some problems exist, viz, the more strength, the less resistance against sea-water corrosion; the harder the alloy, the higher the fatigue.

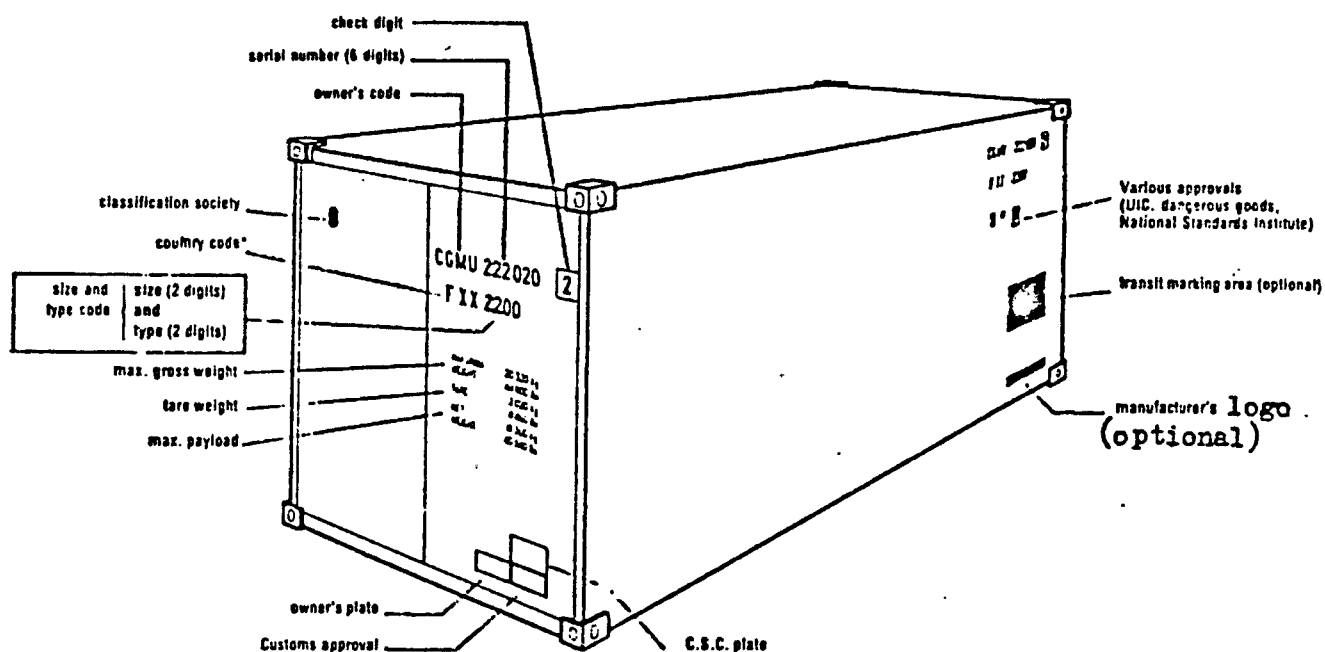
3. Steel :

Steel seems to be the best basic material. When it comes to fabricating strength of a container nothing competes with steel. With its inherent properties it continues to be superior on yield and tensile strength, whereas its modulus of elasticity is

also of a high rank. Yield strength indicates how much static loading it can bear without permanent deflection. As standard containers must be strength resistant when being stacked in six layers fully loaded, the importance is obvious. It is a backbone of a container, ensuring steady performance in the different environments of handling and transport. A broad range of values is available and the designer can choose a steel for whatever application is under investigation. The high tensile strength of steel guarantees that it will better withstand the kind of shocks and impacts to which a container is repeatedly subjected. The greatest advantage of steel containers over all other types is may be the cheapness. It can influence an organisation intending to use containers. Another thing to be considered is the advantage aspect, particularly at the moment conventional ships and handling gear are used. Lifting by forklift trucks can also cause a damage problem when the forks collide with the container. Repairing steel containers does not present any difficulties. Even the most isolated places have welding equipment and steel is easily available to effect the repair. So steel containers are more popular than those made with other materials.

### 3.4 Markings on Containers.

---



Explanation of the figure : 4)

#### 1. Owner's code :

Four letters with the last letter being "U".

#### - Serial number :

Six digits as of selected by container owner. Normally batches of containers are in series; numbers commencing with 2 may indicate 20' units; containers starting with 4 may indicate 40' units.

- Check digit :

The check digit provides a means of validating transmission accuracy of the owner's code and serial number. It is based on an ISO formula : ISO 6346-1981 (E) annex A. The check digit is normally the numeral and is enclosed in a box. It is an integral part of container identification and must always be included on all documentation.

A complete container number consists therefore of eleven (11) digits : Four (4) letters followed by seven (7) numerals.

SCIU 220426 9 identifies a 20' container belonging to a leasing company called "Sea Containers Inc".

2. Classification Society :

Each container carries on the door seal the classification society with which it is registered. As for vessels, the classification society approves construction plans and materials. Checks are carried out at the manufacturer's plant to ensure quality of materials construction standards are maintained.

3. Country Code :

This is an optional code and is indicated by means of the alpha-2 code as set out in annex "D" of ISO 6346-1981. Previously, the country code was alpha-3 and based on section 2 of ISO 3166-1974. Over the years this latter code was amended to its 1981 to format, as shown in annex "E" of ISO 6346-1981. Thus the country code is sometimes difficult to identify where alpha-3 is used and, indeed, some country codes do not appear in any of the above mentioned documents.

ISO 3166-1974		ISO	634-1981
Section 2		Annex "D"	Annex "E"
Canada	CAN	CA	CDN
Cyprus	CYP	CY	CYX
France	FRA	FR	FXX

A code is used in conjunction with the above to indicate the size and type of container; it consists of four numerals as set out in annex F and G of ISO 6346-1981.

#### Annex F :

A general purpose 20' container of 8' high has a code of 20, whereas a similar 8' 6" unit has a code of 22.

#### Annex G :

A container having opening(s) at one or both ends has the code of 00, whereas an open-top container with openings at one or both ends has the code of 50.

Country code FR 2250 indicates a container registered in France, 20' unit, 8'6" high, open-top with openings at one or both ends.

#### 4. Owners Plate :

Indicates owner of container, year and place of manufacture.

5. Customs Approval :

To be approved for the international transport of goods under customs seal, containers must meet the technical requirements of either :

- a. The customs Convention on the International Transport of goods under cover of TIR carnets (TIR Convention); or
- b. The customs Convention on Containers.

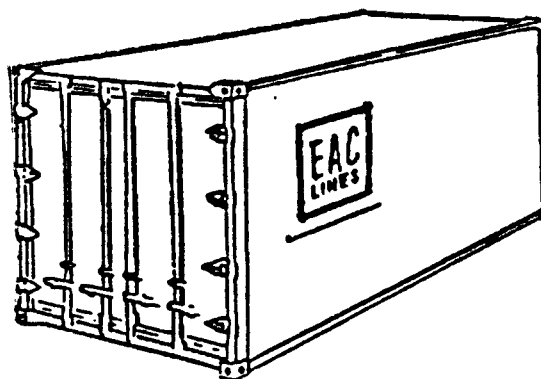
To meet these requirements containers must be constructed and equipped in such a manner that :

- No goods can be removed from, or introduced into, the sealed part of the container without leaving visible traces of tampering, or without breaking the customs seal;
- Customs seals can be simply and effectively affixed to them;
- They contain no concealed spaces where goods may be hidden;
- All spaces capable of holding goods are readily accessible for customs inspection.

The conventions are designed to enable goods to be carried under customs seal in secure containers constructed in accordance with the requirements of the conventions with the minimum customs control in transit. These measures simplify the task of customs officials and at the same time speed the passage of containerized traffic.

Figure 3.1

20' x 8' x 8'



INSULATED (PLENUM)  
CONTAINER.

Internal Dimension :

Length	5.66 m
Width	2.23 m
Height	2.10 m

Dooropening Dimensions :

Width	2.23 m
Height	2.10 m

Weight :

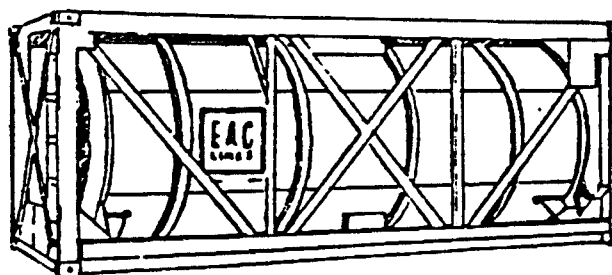
Maximum gross	20.320 kgs
Net	17.670 kgs
Tare	2.650 kgs

Cubic	26.4 m <sup>3</sup>
-------	---------------------



Figure 3.2

20' x 8' x 8'



TANK CONTAINER

Weight :

Maximum

20.320 kgs

Net

17.145 kgs

Tare

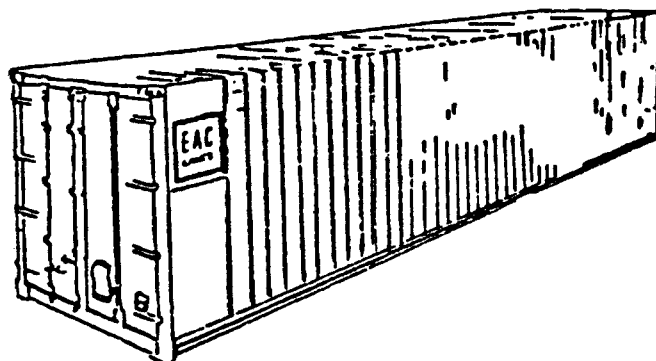
3.175 kgs

Cubic

8.85 m<sup>3</sup>

Figure 3.3

40' x 8' x 8'6"



DRY CARGO CONTAINER

Internal Dimensions :

Length	12.04 m
Width	2.53 m
Height	2.39 m

Dooropening Dimensions :

Width	2.33 m
Height	2.28 m

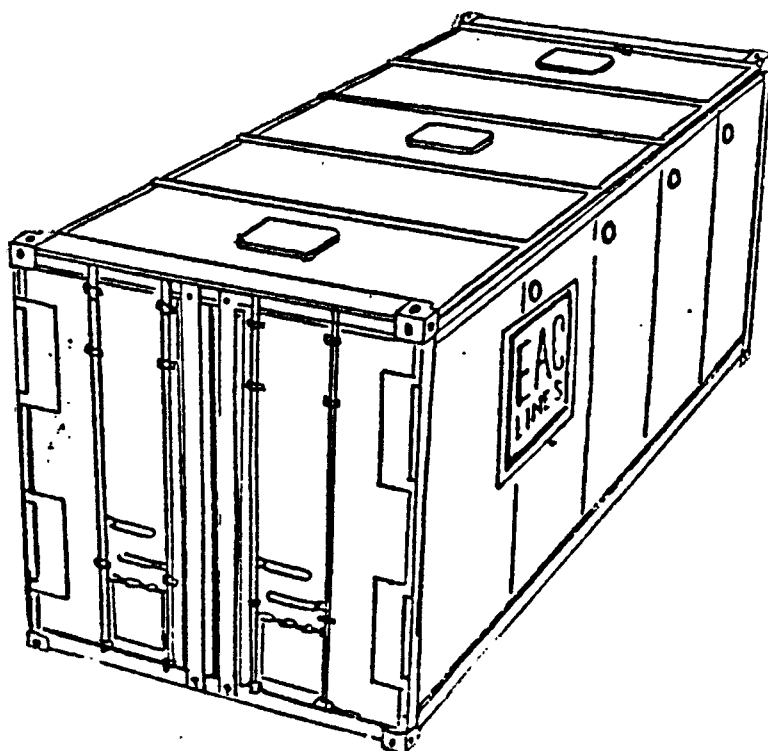
Weight :

Maximum gross	30.480 kgs
Net	26.580 kgs
Tare	3.900 kgs

Cubic	60.0 m <sup>3</sup>
-------	---------------------

Figure 3.4

20' x 8' x 8'6"



VENTILATED BULK/DRY CARGO CONTAINER.

Internal Dimensions :

Length	5.93 m
Width	2.33 m
Height	2.35 m

Dooropening Dimensions :

Width	2.33 m
Height	2.30 m

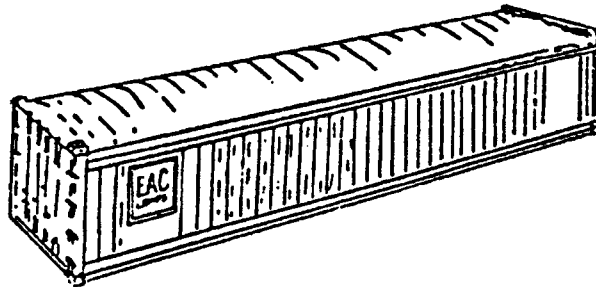
Weight :

Maximum gross	20.320 kgs
Net	18.120 kgs
Tare	2.200 kgs

Cubic	32.5 m <sup>3</sup>
-------	---------------------

Figure 3.5

40' x 8' x 8'6"



OPEN TOP CONTAINER.

Internal Dimensions :

Length between frontwall and doors	12.00 m
Top end-bars	11.40 m
Width between sidewalls	2.31 m
Upper siderails	2.20 m
Height under roof	2.38 m

Dooropening Dimensions :

Width	2.31 m
Height	2.28 m
Width in way of door end-bar	1.33 m

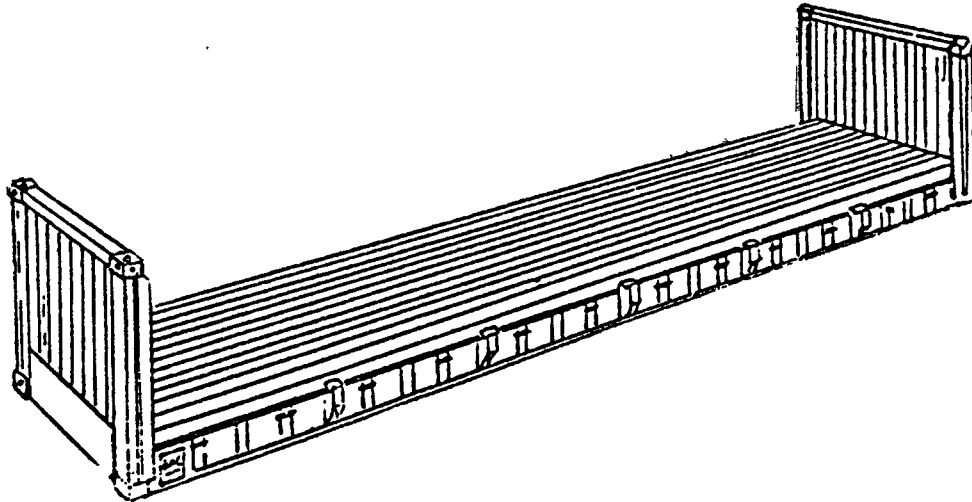
Weigth :

Maximum gross	30.480 kgs
Net	26.480 kgs
Tare	4.000 kgs

Cubic	65.0 m <sup>3</sup>
-------	---------------------

Figure 3.6

40' x 8 x 8'6"



FLAT RACK.

Internal Dimensions :

Length between endwalls	12.15 m
Top endbars	12.08 m
Cornerposts	11.82 m
Width	2.24 m
Height	1.98 m

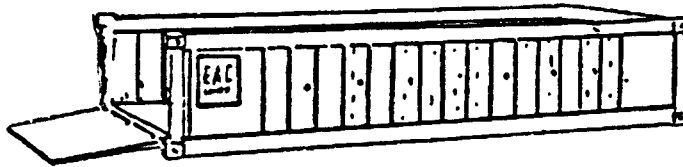
Weight :

Maximum gross	30.480 kgsm
	(45.000 kgs)
Net	25.370 kgs
	(39.890 kgs)
Tare	5.110 kgs

Cubic	52.9 m <sup>3</sup>
-------	---------------------

Figur 3.7

20' x 8' x 4'



BIN CONTAINER.

Internal Dimensions :

Length	5.90 m
Width	2.30 m
Weight	1.05 m

Ramp opening Dimensions :

Width	2.27 m
Height	1.05 m

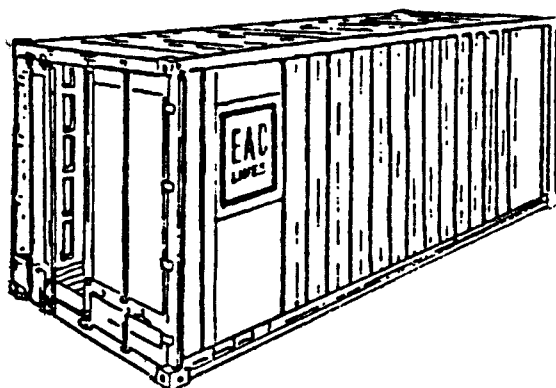
Weigth :

Maximum gross	20.320 kgs
Net	18.800 kgs
Tare	1.520 kgs

Cubic	14.3 m <sup>3</sup>
-------	---------------------

Figur 3.8

20' x 8' x 8'



DRY CARGO CONTAINER.

Internal Dimensions :

Length	5.92 m
Width	2.34 m
Height	2.27 m

Dooropening :

With	2.33 m
Height	2.17 m

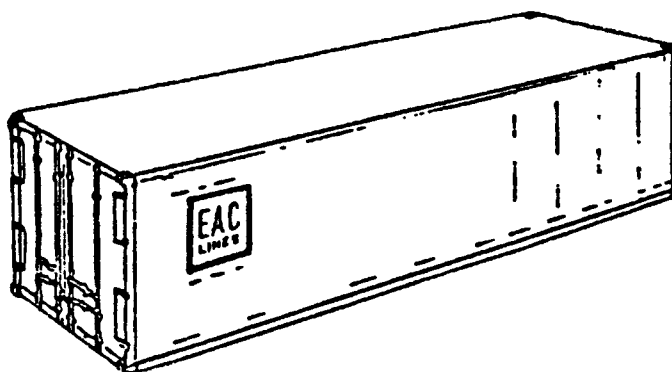
Weight :

Maximum gross	20.320 kgs
Net	18.320 kgs
Tare	2.000 kgs

Cubic	31.5 m <sup>3</sup>
-------	---------------------

Figur 3.9

20' x 8' x 8'6"



DRY CARGO CONTAINER.

Internal Dimensions :

Length	12.06 m
Width	2.35 m
Height	2.39 m

Dooropening :

Width	2.34 m
Height	2.28 m

Weight :

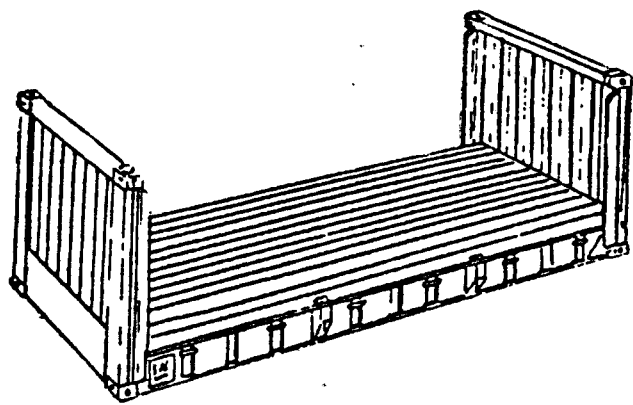
Maximum gross	30.480 kgs
Net	27.330 kgs
Tare	3.150 kgs

Cubic	67.7 m <sup>3</sup>
-------	---------------------



Figure 3.10

20' x 8' x 8'6"



FLAT RACK.

International Dimensions :

Length between endwalls	5.95 m
Top endbars	5.95 m
Cornerposts	5.70 m
Width	2.24 m
Height	2.29 m

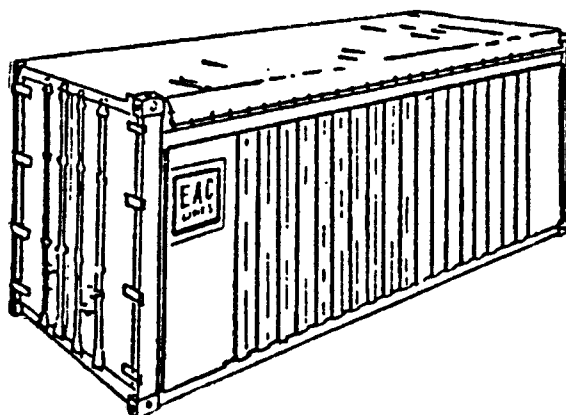
Weight :

Maximum	20.320 kgs
Net	18.070 kgs
Tare	2.250 kgs

Cubic	30.4 m <sup>3</sup>
-------	---------------------

Figure 3.11

20' x 8' x 8'6"



OPEN TOP CONTAINER.

Internal Dimensions :

Leng between frontwall '	5.89 m
Top endbars and doors	5.26 m
Width between sidewalls	2.33 m
Upper siderails	2.11 m
Height under roof	2.38 m

Dooropening Dimensions :

Width	2.33 m
Height	2.28 m
Width in way or door endbar	1.85 m

Weight :

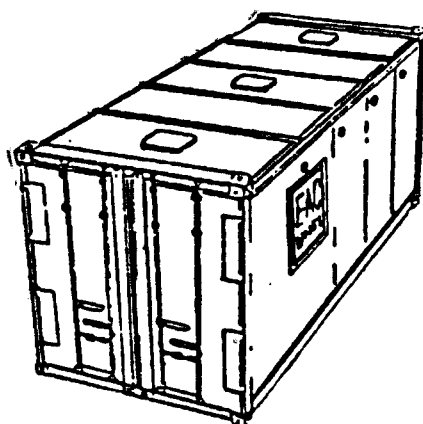
Maximum gross	20.320 kgs
Net	18.270 kgs
Tare	2.050 kgs

Cubic

32.8 m<sup>3</sup>

Figure 3.12

20' x 8' x 8'6"



VENTILATED BULK/DRY CARGO CONTAINER.

With ventilation facilities, specially developed for transport of produce cargoes liable to sweat damage.

Special features :

1. 3 roof hatches for bulk loading;
2. 2 discharge openings in the doors for bulk discharge;
3. Ventilation opening in the sides;
4. Ventilation openings in the floor.

*Footnotes*

-----

1. *G. Van Den Burg, Containerisation and Other Unit, - Transport, Hutchinson Benham, London, 1975, p. 9.*
2. *Dr. H.L. Beth, Director, Institute of Shipping Economics, Container Market Ownership, Bremen.*
3. *John Agnew and Jack Huntly, Container Stowage A Practical Approach and Brochure EAC.*
4. *United Nations Conference on Trade and Development (UNCTAD) and Antwerp Port Engineering and Consulting(APEC), Seminar on Container Terminal Management, Antwerp, Belgium, 19 September - 7 October 1983, August 1985, pp. 20-22.*

## CHAPTER IV

### PORT OF TANJUNG PRIOK

#### 4.1 The History of The Port of Tanjung Priok.<sup>1)</sup>

Tanjung Priok is situated within the territory of the Special Region of the Capital City Jakarta Raya at 106° 52' East Longitude and 6° 6' South Latitude, it is the largest harbour in Indonesia with important functions regarding the economy of the country.

Its location, close to the centre of Government of the Republic of Indonesia, makes the role of the harbour of Tanjung Priok with respect to the development of industry and trade, a particularly dominant one.

This year, 1986 the Port of Tanjung Priok will celebrate it's 109th year, relatively old but becoming more efficient and more representative.

Before the establishment of the Port, the sea gate to Jakarta was Sunda Kelapa, another port of Jakarta. Today Sunda Kelapa is still maintained and utilized as a port for local vessels concerned with the interland activities and for the traditional sailing ships originating from all over Indonesia.

The first stage of construction of the Tanjung Priok Port was Port I, in 1877, followed by the next stage, Port II, in 1914. Port III was commenced in 1929. After the independence of Indonesia the interisland port (NUSANTARA) was construc-

ted in 1953 and finally the container terminal was built in 1974.

In general, the development of the harbour of Tanjung Priok is as follows :

- 1877 - The harbour of Tanjung Priok was built, commencing with the construction of harbour I, finished in 1883.
- 1912 - Congestion of vessels occurred.
- 1914 - Harbour II was built and finished in 1917; the Railway Station began to function.
- 1917 - Construction of the NISM coal storage and the Ancol highway.
- 1921 - Harbour III was built and due to the depression, the construction was only finished in 1932.
- 1929 - The borders of the harbour were established (Statute Book of 1929 No. 26).
- 1934 - The harbour of Tanjung Priok was regulated and instructed to be managed with the status of state corporation (Statute Book of 1934 No. 109).
- 1935 - Construction of "Bendungan Delapan" (Eight Dams) was carried out in the Sunter canal which emptied into the Lagoa river.
- 1936 - In order to prevent the harbour becoming shallow at Bintang Mas Ancol, a siphon with a door was built under the Ancol canal.
- 1942 - Period of occupation of Indonesia by the Japanese army and the harbour of Tanjung priok hardly functioned because the shipping channel to the harbour pool was littered with damaged vessels.
- 1943 - The shipping channel and the harbour pool were cleaned by the Japanese army.
- 1945 - Independence was proclaimed and the harbour of Tanjung Priok came under the control of Republic of Indonesia.

- 1950 - The harbour of Tanjung Priok was congested and the goods were removed to Lapangan Banteng, Jakarta. Thereafter the goods were sold by public auction in 1951.
- 1955 - Nusantara harbour I was inaugurated by the Vice President Dr. Moch. Hatta.
- 1960 - The oil harbour of Pengasinan was built.
- 1964 - By virtue of the government Regulation No. 18 Year 1964 the Harbour Administrator Organisation was formed.
  - The harbour state corporations were dissolved and their authority was assigned to the new harbour authority organisation (The Harbour Administration Authority) pursuant to the Government Regulation No. 18 year 1969.
- 1970 - The warehouses and the piling fields were not able to accommodate the goods anymore.
- 1971 - In order to overcome congestion, a Harbour Control Team (WALI SONGO) was established and cooperation with Amsterdam harbour authority was maintained in order to modernized the harbour of Tanjung Priok .
- 1972 - The "Operasi Bersih" (Cleaning Operation) was carried out so that congestion could be overcome.
- 1974 - Commenced with the development of the harbour facilities, including the construction of the Container Terminal.
- 1977 - The 100th anniversary of the harbour of Tanjung Priok was celebrated under the leadership of the Harbour Administrator J. E. Habibie.
- 1980 - Operational activities were felt to be increasing; visits of vessels and cargo handling activities were increasing; containers reached 87,000 units.
- 1981 - President Soeharto inaugurated the operation of the container Terminal.

1983 - The Minister of Communications, Rusmin Nuryadin, inaugurated the use of the new harbour office on September 14, 1983.

- With the issue of the Government Regulation No. 11 year 1983, the Harbour authority system has changed and in order to exploit the harbour services, the "PERUSAHAAN UMUM PELABUHAN" (THE HARBOUR PUBLIC ENTERPRISE) was established as a State owned business agency.
- The exploitation of the harbour of Tanjung priok became the responsibility of the Perusahaan Umum Pelabuhan II in this case The Branch Office of Tanjung Priok.

#### *4.2 The Features of The Port of Tanjung Priok.<sup>2)</sup>*

---

##### 1. Facilities :

a. Harbour Pool	:	424.140 HA
b. Land	:	603.800 HA
c. Wave Breaker	:	8.465 HA
d. Quay :		
- Harbour I	:	2,540.90 M
- Harbour II	:	2,202.55 M
- Harbour III	:	1,709.35 M
- Harbour IV	:	1,211.30 M
- Container Terminal	:	400.00 M
<hr/>		
Total	:	8,064.10 M



e. Special :

- Wheat	:	612.00 M
- Fuel	:	100.00 M
- Liquid chemicals	:	276.00 M
-----		
Total	:	538.00 M

f. Mooring Buoys	:	38 units
(1). Ocean-going	:	25 moorages
- Length	:	5.478 M
- Depth	:	10 - 11 M LWS
(2). Interinsular	:	33 moorages
- Length	:	2.86 M
- Depth	:	6 - 10 M LWS
(3). Oil Scaffolding	:	4 moorages
- Length	:	100 M
- Depth	:	8 - 10 M LWS

g. Warehouses :

- Line I	:	41 units-extent	:	196.126 m <sup>2</sup>
- Line II	:	under the status of line I	:	20 units -
		to the extent of	:	37.600 m <sup>2</sup>
- Non Perum	:	14 units-extent	:	19.085 m <sup>2</sup>
- Line II	:	5 units-extent	:	4.768 m <sup>2</sup>

h. Field :

- Number	:	88 units to the extent of 383,304 m <sup>2</sup>
----------	---	--

i. Unloading/loading equipment :

(1). Land.

a). Forklift :

- Perum (Public Enterprise) Tanjung Priok-
--

Branch office: 78 units (cap. 2-25 tons)  
- Non Perum : 305 units (cap.2-25 tons).

b). Derrick - cars :  
- Perum (Public Enterprise) Tanjung Priok -  
Branch office : 9 units (cap.5-35 tons)  
- Non Perum : 42 units (cap.5-136 tons).

c). Electric derricks of Perum Tanjung Priok  
Branch office : 4 units (3 tons).

(2). Sea :

a). Floating derricks of Perum Tanjung Priok  
Branch Office : 4 units (cap. 13-100 tonns).

b). Barges of Perum Tanjung Priok Branch Office :  
4 units (cap. 100-400 tonns)  
- Non Perum : 14 units (cap. 200-400 tonns)  
- Tugboats : 15 units  
- Pilotboats : 8 Units  
- Docking ships : 8 units.

j. Fire Brigade :

- Fire engines	:	6 units
- Portable fire extinguishers	:	31 units

2. Level of Harbour Services (1984) :

a. Service hours :

- Ocean-going vessels	:	58 hours
- Interinsular vessels	:	81 hours
- Tankers	:	67 hours

b. Waiting hours (1984) :

- Ocean-going vessels	:	8 hours
-----------------------	---	---------

- Interinsular vessels	:	5 hours
- Tankers	:	24 hours

c. Staying hours of the vessels in harbour (1984) :

- Ocean-going vessels	:	67 hours
- Interinsular vessels	:	87 hours
- Tankers	:	24 hours

d. Unloading and Loading capacity (Ton/gang hour) (1984):

(1). Ocean-going :

- Cargo in bulk	:	24 tons
- General cargo	:	13 tons
- Bag cargo	:	22 tons

(2). Regional (Nusantara) :

- Cargo in bulk	:	65 tons
- General cargo	:	10 tons
- Bag cargo	:	16 tons

3. Visits of Vessels (unit) :

a. Merchant vessels:	1980	1981	1982	1983	1984
- Ocean going	2,021	2,102	2,169	1,972	1,758
- Interinsular	2,202	2,881	2,640	2,634	2,472
- Tanker	496	426	442	432	460
- Total	4,719	5,409	5,251	5,038	4,690
- Percentage	0%	+14.62%	-2.92%	-4.06%	-6.90%

b. Non merchant vessels

- Ocean-going	150	107	82	88	134
- Interinsular	374	841	1,010	519	584
- Total	524	948	1,092	607	718
- Percentage	0%	+80.92%	+15.19%	-44.41%	+18.29%
Grand total	5,243	6,357	6,343	5,645	5,408
Percentage	0%	+21.25%	-0.22%	-11.00%	-4.20%

4. Passengers :

The flow of passengers passing through the harbour of Tanjung Priok has recently tended to decrease. The number of passengers from 1980 up to 1984 is as follows :

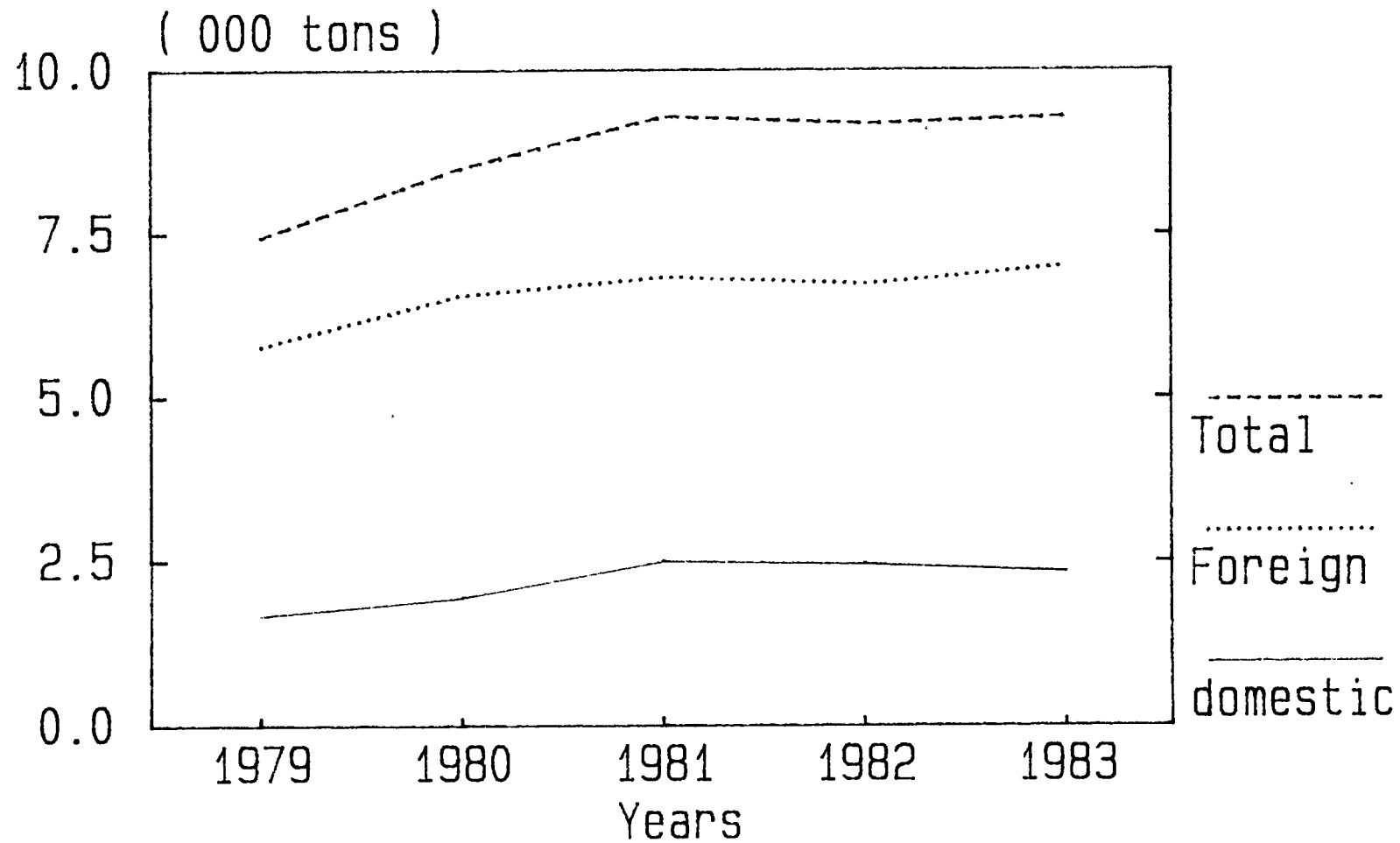
- 1980 : 462,040 persons
- 1981 : 309,366 persons
- 1982 : 309,366 persons
- 1983 : 267,243 persons
- 1984 : 387,982 persons

5. Cargo handling in the port of Tanjung Priok in 1979-1983 shown in graphic 4.1

6. Container cargo handling (both of Container Terminal Unit and Conventional Berth) in the Port of Tanjung Priok 1981-1985 can be seen in table 4.2.

Table 4.1

# Cargo handling in the Port of Tanjung Priok 1979-1983



Source: Tanjung Priok Port Admin.

Table 4.2

Container Handling in the Port of Tanjung Priok 1981-1985.

DESCRIPTION	1981	1982	1983	1984	1985
CONTAINER HANDLING					
A. CNTAINER TERMINAL :					
- Unloading TEU	48,383	60,259	64,592	82,037	78,384
TON	565,848	714,242	778,099	1,009,708	936,056
- Loading TEU	48,934	59,401	63,661	75,661	75,960
TON	108,421	109,077	151,353	268,178	327,801
- SUB TOTAL TEU	97,317	119,660	128,253	157,698	154,344
TON	674,269	850,319	929,452	1,277,886	1,263,857
- INCREASE/DECREASE					
TEU	0%	+22.96%	+7.18%	+22.96%	-2.13%
TON	0%	+26.11%	+9.31%	+37.49%	-1.10%
B. CONVENTIONAL BERTH :					
- Unloading TEU	24,840	30,072	27,363	24,216	32,802
TON	259,619	333,234	301,720	206,922	372,568
- Loading TEU	18,000	25,098	27,004	23,670	33,865
TON	52,521	62,762	66,985	100,445	155,119
- SUB TOTAL TEU	42,840	55,170	54,367	47,886	66,667
TON	312,140	395,996	368,705	307,367	527,687
- INCREASE/DECREASE					
TEU	0%	+28.78%	-1.45%	-11.92%	+39.22%
TON	0%	+26.86%	-6.89%	-16.64%	+71.68%
T O T A L TEU	140,157	174,830	182,620	205,584	221,011
TON	986,409	1,246,315	1,298,157	1,585,253	1,791,544
INCREASE/DECREASE					
TEU	0%	+24.74%	+4.46%	+12.57%	+7.50%
TON	0%	+26.35%	+4.16%	+22.12%	+13.01%

Source : Tanjung Priok Port Administration.

#### *4.3 The Position of Tanjung Priok in the National and International Commercial Network.*

---

The largest archipelago in the world, Indonesia consists of five main islands, Java, Sumatra, Kalimantan, Sulawesi and Irian Jaya and about 30 small archipelagoes, a total of 13,677 islands. Stretching 5,152 kilometers (3,200 miles) from east to west and 1,770 kilometers (1,100 miles) from north to south it has a total land area of 1,905,443 square kilometers (735,354 square miles)

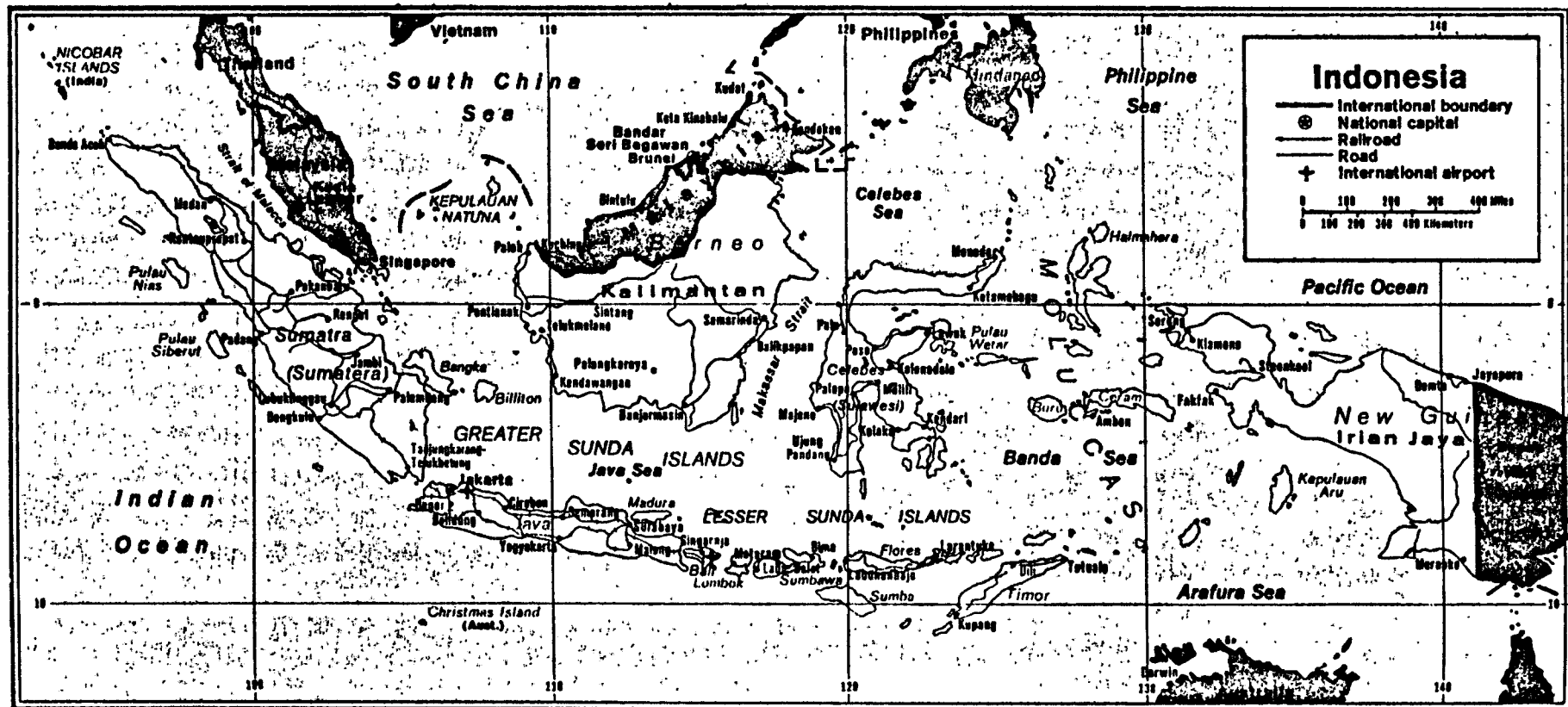
The total population of Indonesia is an estimated 160 million and it is the fifth most populous country in the world, exceeded only by China, India, the Soviet Union and the United States of America.

Java is the principal island in terms of population and land use and The capital city of Indonesia, Jakarta Raya, the centre of economic activity with a population of over 8 million, is located on its north western coast. It is also the most densely populated island and about 60 per cent of the total population of Indonesia live on it. Tanjung Priok itself is situated within the territory of the Special Region of the Capital City of Jakarta Raya at 106° 52' east longitude and 6° 6' south latitude and is the largest harbour in Indonesia.

Indonesia is situated between latitude 6° north and 11° south and longitude 95° east and 141° east and lies between two continents, Asia and Australia and two oceans the Indian Ocean and Pacific Ocean, making it an important passage for international sea traffic. (See map pp.5 and 49)

With regards to the present sea traffic through the Malacca

# Indonesia





strait which is becoming overcrowded, the position of Indonesia has become more important as an alternative passage through Indonesia must be found in the near future. As an alternative passage to the Malacca Strait, Indonesia offered the Lombok strait a few years ago.

Trade has always been linked with transport. From its start some five thousand years ago-when sledges carried tools made of flint-till today, all transactions have involved transport.<sup>3)</sup> In human life, trade and transport plays an integral part. This shows that a healthy climate for trade and transport is always to be found in populous regions. Nowadays of the total Indonesian imports approximately 80% per cent are coming in through the most populous island namely Java and the remaining 20 per cent are distributed throughout the other islands. However the contrary is true of export where 80 per cent of non oil and gas exportation from Indonesia, which consists of agricultural commodities such as palm oil, rubber, coffee, tea, plywood etcetera are exported from various islands throughout the Country not including Java and only 20 per cent are exported from Java itself. Nevertheless this figure is changing due to the expansion of export commodities from Indonesia to include cement, textiles, fertilizers, branh etcetera which are mostly exported from Java.

As mentioned above, of all goods imported 80 per cent come in trhough the Island of Java. About 60 per cent of these enter through the port of Tanjung Priok and the remaining 40 per cent via other ports of Java like Cirebon, Semarang, Surabaya etcetera. Thus, it could be understood that the Port of Tanjung priok is playing the most important role in the natioanal commercial network.

#### *4.4 Government Policy Concerning Containerisation.*

---

As stated above Indonesia is placed in a good position in the international commercial network which has made economic growth stronger.

Since Indonesia began large scale development, started in April 1969 following the first five-year Development Plan (PELITA I), the national economic growth has been progressing rapidly. During the first and the second Five-Year Development Plans (1969-1979), the national economic growth was recorded at 8 per cent per year. In spite of the world recession in the last few years, Indonesia has still recorded an economic growth of 5 per cent per year during the third Five-Year Development Plan (1979-1984), although four huge industrial projects valued at 5.1 billion US Dollars have been delayed for one or two years.<sup>4)</sup>

Increasing economic growth was experienced in the expansion of the import trade. Increased import trade suddenly caused congestion of goods in major ports in 1971 especially in the Port of Tanjung Priok which was hard hit. A great amount of import trade accumulated in the Port of Tanjung Priok averaging more than 700,000 tonnes at a time and this caused severe congestion which called for doubled efforts to transport this away from the Port.

In order to overcome the congestion, a Harbour Control Team called "WALI SONGO" was established in 1971 with main task of undertaking "operation clean-up" in Tanjung Priok Port. In cooperation with the Amsterdam Authority the team started to rehabilitate and modernize port facilities which had not been maintained in the past years, furthermore new sheds were constructed and new cargo handling equipment was

installed. With dedication and hard work, at the end of 1972 the port had been cleaned of accumulated goods in the Port was also overcome.

The Port of Tanjung Priok started handling container traffic in 1973, and the total discharged container trade volume was approximately 3,000 TEU twenty foot (20') Equivalent Unit, which was carried by conventional ships. By 1974 the volume of container trade reached 7,700 TEU. The increased volume in container traffic forced the Port Administration to improve the existing terminal facilities including container handling equipment and other port services.

Indonesia being an archipelagic country has more than 250 ports scattered throughout the islands. The four largest ports are Tanjung Priok, Tanjung Perak, Belawan and Ujung pandang which are the gateway ports. These ports handle most of Indonesias' export and import trade except for special bulk commodities such as crude oil, logs, timber etcetera which are shipped by other ports.

As mentioned earlier, containerisation has been established in the ports mentioned above but the integrated multi-modal transport system has not yet been established, due to the lack of a proper road and rail network with their hinterland. Most of the roads are not suitable for the transportation of heavy and large containers, the railway wagons are also not designed for the carriage of containers. These factors have hindered the realisation of a fully integrated multi-modal transportation system such as door to door service.

Based on the matters mentioned above, to establish, develop and improve the container services in the frame to realise

an integrated multi-modal transport system in Indonesia, the Government took the following measures :

1. In the first phase the Government bought a number of container vessels which are operated by Djakarta Lloyd as one of the state-owned companies.

A deep sea container terminal was constructed in the Port of Tanjung Priok to serve as a main container port in Indonesia and the other three main ports are being developed and will be fully equipped in near future with adequate container handling facilities to be able to join the container trade as already established in Tanjung Priok.

2. The next phase saw the announcement by the Government of the Presidential Instruction Number 4/1985 concerning the Policy of the smooth flow of goods to support economic activities, which was officially implemented in June 1985. This instruction aimed at opening up the country's liner trade to more foreign competition and speeding up cargo flows. It eliminated completely routine customs inspections at Indonesian ports for all imports and exports with the exception of some specific commodities, such as weapons and other military equipment, diplomatic goods and low value articles. Instead, the government has appointed Societe Generale de Surveillance (SGS), a private concern, based in Geneva, Switzerland, to inspect all exports and imports in their countries of destination and origin respectively, under a contract lasting three years.<sup>5)</sup>

3. The third phase will be the development of some smaller ports as subsidiary (feeder) ports to serve the major ports referred to in (1) above. These ports will be

equipped with a limited amount of container handling equipment and other facilities to enable to serve smaller vessels which will form part of the feeder service to the major ports.

4. The final phase is the development of a road and rail network to serve the ports and hinterland.

The Government of Indonesia hopes that when these measures are fully realised an integrated multi-modal transport system will be achieved and improvements made as time goes by.

#### *4.5 The objectives of Containerisation in Indonesia.*

---

The most desirable way to move goods from one country to another is to use equipment constructed to be handled by all parties in the transport chain. It is in the efficiency of such equipment that the advantages of container become apparent. The shipper is able to pack his cargo into the container at his own premises, have it hauled by road or rail to a suitable port where it is loaded onto a containership, transported to the foreign port, unloaded to an internal transport system, and delivered to his customer without each individual package of the consignment being handled at each intermediate stage. It is this intermodal concept allowing a through movement which reduces considerably the need for manpower, changes the system into a capital intensive one, quickens cargo movements, reduces risks of damage, and pilferage, and allows increased productivity in the ports. It should therefore be possible to achieve savings over costs incurred during conventional cargo handling, which involved the use of several smaller operators, each of whom

could well delay the consignment.<sup>6)</sup>

In the concept of a multi modal transport system the port is the most important link because of the efficiency attained by the shipping company. Any failure in use of the port will mostly be outside the control of the shipping company. The highly productive port allows ship to turn-round quickly and to spend as much time as possible at sea. It cannot be overemphasized that a ship in port is a liability and that it is only able to earn a return on its capital investment while at sea.

Developing countries have the one advantage that they are containerising after a decade and a half of intensive technological development which has improved systems immensely and widened the range of options available. They are, however, faced with a number of problems, among the most important being the following :<sup>7)</sup>

1. The difficulty of raising funds for port investment. This is particularly the case when ports are run by the public sector and consortias of lines and other interests, which often form terminal operating companies in developed countries, are not encouraged.
2. Lack of tradition for the planned maintenance which is essential for the operation of complicated and high cost container handling equipment.
3. Physical and administrative difficulties in the integration with inland modes leading to problems in the operation of integrated systems

and maintenance of container control.

4. Problems in cargo balance and the movement of empty boxes.
5. Customs and other bureaucratic delays leading to potentially long inland container turn-round times and container dwell times in port.
6. Social difficulties in dealing with a reduction in labour requirements in ports.

As a developing country Indonesia has not been exception in determining a programme of establishing the container system. Nevertheless, by implementing the container system, Indonesia stands to realise the following gains :

Fistly, by establishing a main line container terminal at the port of Tanjung Priok with the necessary infrastructure and providing adequate cargo handling equipment for the other three main ports, congestion can be ended and the turn-round of ships at the port will be quicker by the optimum utilisation of the improved port cargo handling equipment. Higher productivity will be attained giving better services to port users and reduce the cost of transportation to the consumers. Quick turn-round of ships will instil confidence in shipowners who will be ready to avail their ships to serve Indonesian sea trade.

Secondly, by establishing major deep sea container terminals in each of three main ports and relegating a number of major ports larger container vessels will use the main three ports whilst the feeder ports will be served by smaller vessels to supply the major ports. The establishment of main line

ports will help to concentrate better cargo handling equipment in these ports. Indonesia being an archipelago country, containers should be transported in the round-the-world context in a mini scale by the creation of feeder services advocated here.

Finally, the hinterland road and rail network must be established to serve the ports so as to enable containers to be transported to destinations without delay. When the development of major deep sea container terminals, the feeder ports and the adequate road and rail network are completed, an integrated full intermodal transport system will have been achieved. A cheaper mode of transportation will have been established with the added advantage to the customer to pay less for the goods.



### *Footnotes*

-----

1. *Tanjung Priok Brochure, issued by Tanjung Priok Port Administration, 1985.*
2. *Ibid.*
3. *G. Van Den Burg, Containerisation and Other Unit Transport, Hutchinson Benham, London, 1975, p.9, (unnumbered)*
4. *Newsweek, January 28, 1985.*
5. *Stephen J. Matthews, A Breakthrough for Shipping as Indonesians Relax Regulations, Containerisation International, August 1985, p. 48.*
6. *J.R. Whittaker, AICS, Containerisation, Second edition, Hemisphere Publishing Corporation, Washington London, 1975.*
7. *S. Gilman, Editor, Container Logistics and Terminal Designed, The University of Liverpool Marine Transport Centre, September 1981, p. 4.*

## CHAPTER V

# THE CONTAINER TERMINAL UNIT OF THE PORT OF TANJUNG PRIOK AND ITS ACTIVITIES

### *5.1. Introduction*

---

Containerisation was firstly introduced into the Port of Tanjung Priok in 1973. But the real handling began with the completion of a purpose built container terminal in 1978. The terminal is situated in Basin III East. The final phase in its construction was completed in 1981.

The terminal has a quay length of 400 meters with two berths with a depth maintained at 10.5 meters at low water level. The quay is equipped with three gantry cranes with an lifting capacity of 40 tons each under spreader and an outreach of 32 metres and a back reach of 16 metres. This has enabled the facility to handle 154,344 TEU in 1985 (table 5.1).

Table 5.1  
Container traffic in the Container Terminal Unit (CTU)  
of the port of Tanjung Priok in 1980 - 1985.

YEAR	IMPORT		EXPORT		TOTAL		CHANGE (%)	
	TEU	TON	TEU	TON	TEU	TON	TEU	TON
1980	30626	361292	29745	79427	60371	440219	0.0	0.0
1981	48383	565848	48934	108421	97317	674269	61.2	52.99
1982	60259	741242	59401	109077	119660	850319	22.96	26.11
1983	64592	778099	63661	151353	128253	929452	7.18	9.31
1984	82037	1009708	75661	268178	157698	1277886	22.96	37.49
1985	73384	936056	75960	327801	154344	1263857	-2.13	-1.10

The containerized export cargoes consist among others of: tea, coffee, rubber, cotton, oil palm, tobacco, tin garments, cattle food etc. While the import commodities consist of, machineries, gypsum, raw material for paint, raw material for plastic, car component, spare part, electronic product chemical etc.

The stacking yard has a capacity for 2950 TEUs (4250 for imports/ 1675 for exports). The consolidation freight station is 6000 square metres with 3 units; two for imports and one for exports with a capacity of 1200 tons each.

The Terminal has eight transtainers for yard stacking with height of 16.5 meters and a width (between wheels) of 14 meters. Maximum lifting capacity is 40 tons for 8.73 meters. maximum transfer distance is 9.6 meters. The terminal is also equipped with top lift and side lift fork

trucks for containers with other head trucks and chassis and other equipment necessary for handling containers.

The terminal is capable of handling around 180,000 TEU a year, based on an average dwell time of 8 - 9 days. This is estimated to suffice the container trade via the port till 1995 according to CTU management assessment of the trade needs as mentioned in Containerisation International, 1985. But looking at table 5.1, gives the notion that this need will approach this limit towards the year of 1988 at the latest.

The port has a plan to expand the quay length by another 400 meters and instal other gantry cranes to encrease the CTU container handling capacity to meet the increasing demand on port facilities.

Containerizable export cargo in Tanjung Priok seems to be encouraging as shown in table 5.2.

Table 5.2.

Number of loaded exported containers in Tanjung Priok and Belawan in 1981-1984.

Year	Tanjung Priok	Belawan
1981	9983	3089
1982	10315	4520
1983	12788	6208
1984	19731	5670

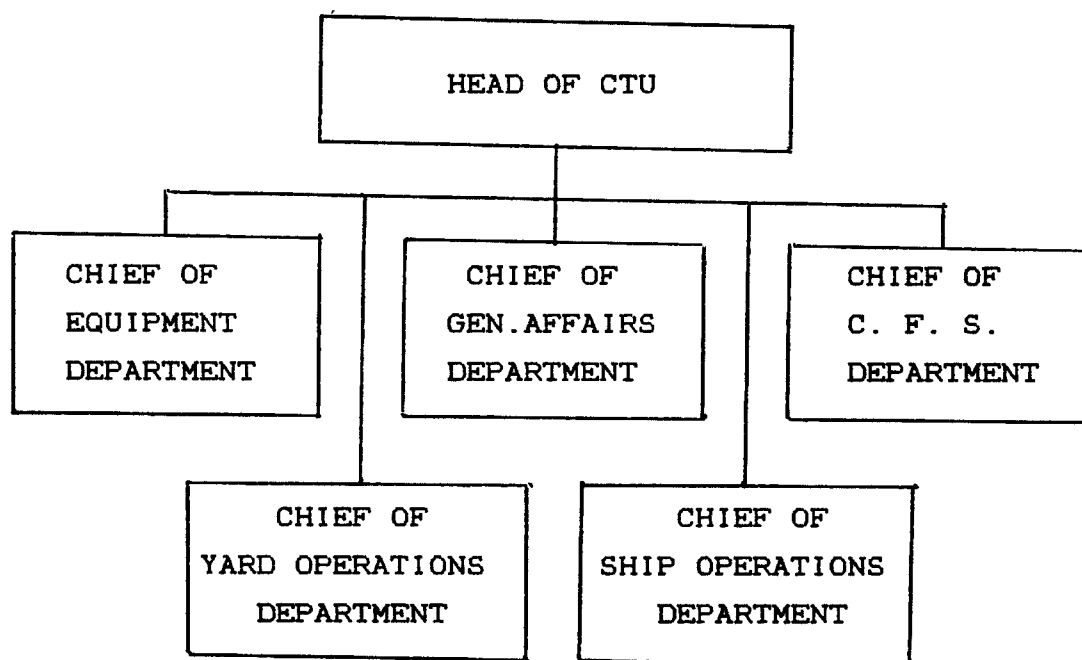
Source : Containerisation International.

These figures of the Port of Tanjung Priok compared with other ports in Indonesia, i.e. Belawan show considerable increases in containerizable export cargoes.

## 5.2. Management

---

Terminal management is run by the Container Terminal Unit (CTU), an organisation under the control of Tanjung Priok Port Administration. The CTU organizational structure is shown below :



The Unit is run with a high degree of independence to ensure uninterrupted work and a fairly smooth flow of information. The facility employs around 430 people and works around the clock on a three shift basis.

### 5.3. Operations

-----

The port uses transtainers in yard stacking 8 pieces are used (3 wide span and 5 small span) supported by a fleet of tractor units.

The procedure of operations is :

a. Technical check point :

This is done at the gate of the terminal where all containers which are loaded or unloaded are consigned at the gate. A report of damage to the containers is made by filling in a special form (EIR). Seals are also checked. All containers leaving the terminal are to be reported every day. Movements of containers for custom inspection is also supervised and controlled.

Weighing of containers and printout of the weighing note is done at the gate.

b. Administrative activities :

These include :

- Terminal throughput of containers;
- Positioning of full containers in container stacking area to suit different purposes in accordance to customer, ship, contents and other considerations; -
- Data container statistical information;

c. Reefers :

Handling of reefer containers is carried-out where services are rendered to supply power, plugging/unplugging of containers and recording and maintaining the tempe-

ratures of reefer containers.

d. Operations Center :

This has the activities of :

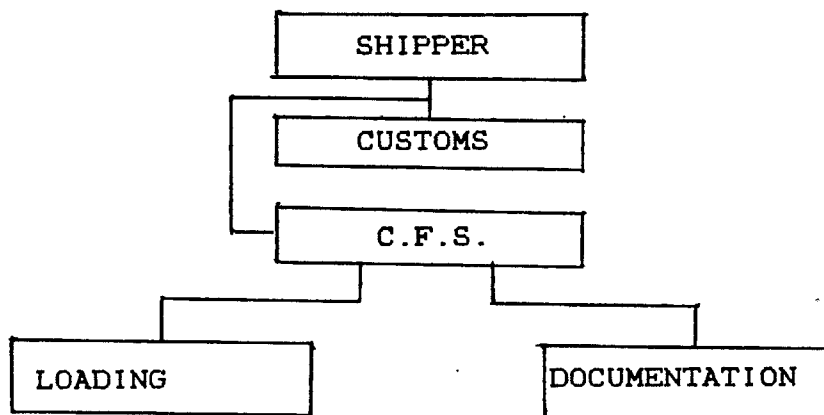
- Operational follow-up where stevedoring staff are given responsibility for organization and planning of ships.
- Administrative follow-up where some staff are assigned to avail themselves to customers for all pre-loading operations and all related data together with others.
- After loading ship papers and reports necessary to ensure good work and beneficial results.

e. Container Freight Station (CFS) :

As mentioned before, this function is carried-out in three sheds of 3600 tons capacity.

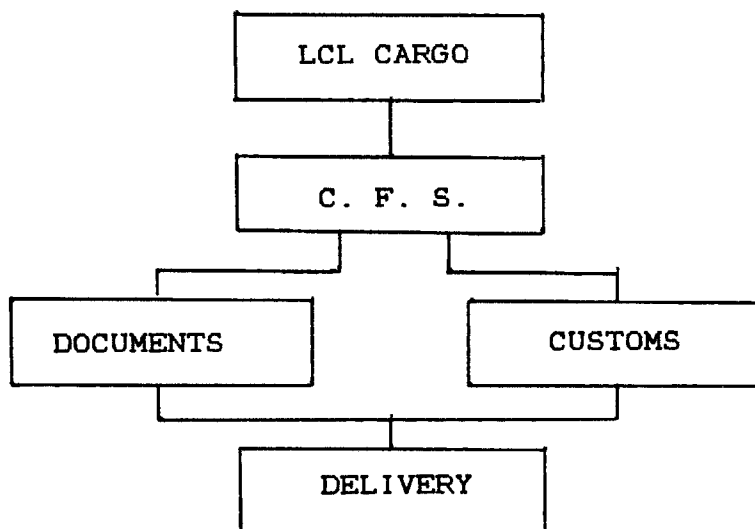
Stuffing :

- The shipper delivers cargo for export to the special export shed in the station where a shed note/dock receipt is issued.
- CFS staff carries-out stuffing operation and completes labelling and seals.
- Container is ready for loading.
- Documentation report is thus issued.



(2) Stripping :

- LCL containers are transfered to CFS;
- CFS staff unstuff cargo from containers;
- Arrangement of import at custom clearence;
- Arrangement of documents of related matters to terminal;
- Cargoes delivered to consignee;
- A report with documents is prepared for the favour of the shipping company.





#### 5.4. *Export cycle*

---

a. Empty containers :

- (1) Booking number;
- (2) Positioning;
- (3) Documents :
  - List of daily movements;
  - Stock list at request.

b. Full Containers :

(1) Acceptance full :

- Technical inspection for box number, damages, identify of carrier and seals;
- Control of booking;
- Planning board-stacking in accordance with booking number.

(2) Documents :

- List of daily movements;
- Container to be shipped;
- Overdue containers;

(3) Loading :

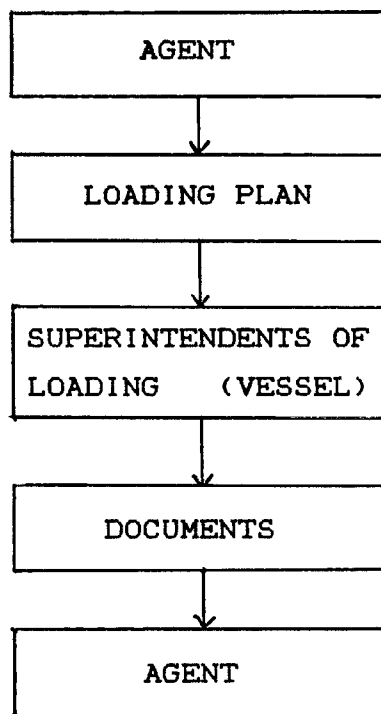
Loading documents are supplied by agent, they contain the following :

- Input of corrections;
- Documents :
  - \* Loading plan;
  - \* Stacking list.

(4) Completion of loading :

- Stowage places recorded;
- Load plan settled;

- Manifest for customs;
- Damage list;
- List of any short shipped container.

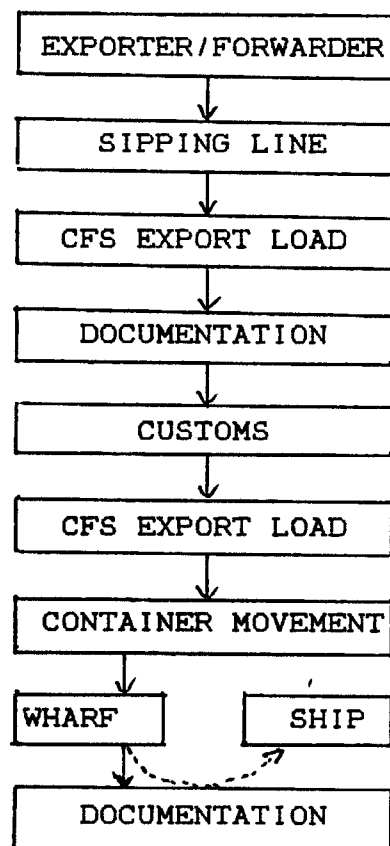


#### 5.5. *Export via CFS*

---

- Exporter/forwarder books the cargoes to the shipping company;
- Shipping company informs the export plan to CFS Container Terminal Unit;
- Exporter/forwarder settles all charges of wharfage, etcetera;
- Exporter/forwarder submits loading receipt (from shipping line) and export documents in favour of custom inspection, to settle custom's clearance for loading, etcetera.

- e. Submitting the customs clearance for loading, preparing containers (stuffing carried-out after customs clearance), informing yard allocation section, containers movement section, ship planner (containers are in the position ready to be loaded). Yard allocation section prepares yellow card to be sent to the containers movement clerk.
- f. Containers are placed onto export yard for loading onto the ship. When ship is ready to load, containers are transferred to the wharf with their export cards.
- g. Ready for loading, export cards are sent to allocation office and then sent to the document service clerk.
- h. Document service clerk issues a billing note against the shipping line in accordance with export cards received from wharf. This is shown in the following diagram.



### 5.6. Import Cycle

---

#### a. Full Containers :

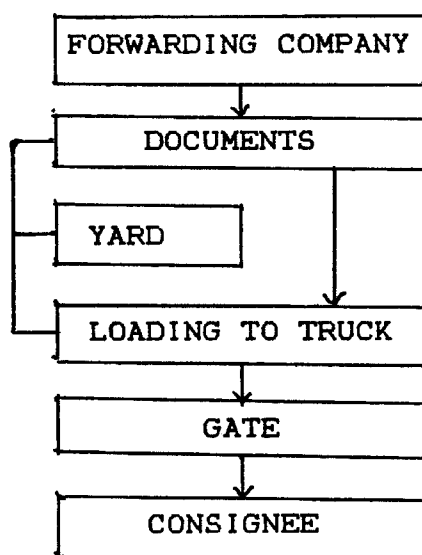
##### (1) Documents are submitted by agent :

- Manifest with stowage plan is transmitted before ships arrival for pre-planning purposes of the terminal and its facilities;
- Unloading :
  - \* stacking list,
  - \* damage list/report,
  - \* List of transhipments and stacking position.

##### (2) Delivery :

- i ) List of FCL delivered full;
- ii) Procedures :
  - submission of consignments note;
  - check documents;
  - delivery settlement in yard :
    - \* location;
    - \* truck loading and gate pass;
    - \* final check at gate.

This is elaborated in the following diagram :



## CHAPTER VI

### THE ADVANTAGES AND DISADVANTAGES OF CONTAINERISATION

#### *6.1 The Advantages of Containerisation.*

---

Alan E. Branch in his book "The Element of Shipping" summarized the advantages of containerization as follows:  
1)

- (a) It permits a door-to-door service being given which may be from the factory production site to the retail distributor's store-an overall distance of may be 10,000 km.
- (b) No intermediate handling at terminal (port) transshipment points:
- (c) The absence of intermediate handling plus quicker transits permits less risk of cargo damage and pilferage.
- (d) Low risk of cargo damage and pilferage enables more favourable cargo premiums to be obtained compared with conventional cargo shipments, i.e. tween-deck tonnage.
- (e) Elimination of intermediate handling at terminal transfer points, i.e. ports, enables substantial labour savings to be realized, which in industrial

high income per head countries can realize considerable attractive financial savings.

- (f) Less packing need for containerized shipments. In some cases particularly with specialized containers, e.g. refrigerated tanks (liquid or powder), no packing is required. This produces substantial transport.
- (g) The elimination of intermediate handling coupled with the other advantages of containerized shipment, permits the cargo to arrive in a better when compare with conventional cargo shipments.
- (h) Emerging from the inherent advantages of containerization, rates are likely to remain more competitive when compared with conventional tonnage ('tween-deck) shipments. A significant reason is that containerization is in the main a capital-intensive transport system, compared with conventional liner systems which are very much labour intensive.
- (i) Transits are much quicker compared with conventional cargo shipments. This is achieved through a combination of faster vessels, the rationalization of ports of call and substantially quicker cargo handling. An example is the UK/Australia service where the round voyage time has been reduced from the twenty weeks taken by conventional services a few years ago to the ten weeks (approximately) taken by container vessels nowadays.
- (j) Emerging from faster transits and the advantages under items (g) and (h) it encourages trade develop-

ment and permits quicker payment of export invoices.

- (k) Containerization has permitted fleet rationalization. On average one container vessel-usually of much increased capacity and faster speed has displaced up to six 'tween-deck vessels on deep-sea services. This development has been facilitated by the rationalization of port of call.
- (l) Container vessels attain much improved utilization and generally are very much more productive than the 'tween-deck tonnage.
- (m) Faster transits usually coupled with more reliable schedules and ultimately increased service frequency, are tending to encourage many importers to hold reduced stocks/spares. This produces saving in warehouse accommodation needs, lessens risk of obsolesceth stock, and reduces importers working capital.
- (n) Containerization produces quicker transits and encourages rationalization of port of call. This in many trades is tending to stimulate trade expansion through much improved service standards. Accordingly it will aid trade development
- (o) Provision of through documentation (consignment-note)-bill of lading.
- (p) Provision of through rate. This embraces both maritime and surface transport costs. This factor and the one under item (o) very much aids the marketing of the container concept.

(q) More reliable transits-particularly disciplined controlled transit arrangements.

(r) New markets have emerged through container development and its inherent advantages.

## *6.2 The Disadvantages of Containerisation.*

---

Besides the advantages there are also some disadvantages as Alan E. Branch notes in the following :<sup>2)</sup>

(a) Containerization is a capital intensive project and as such is beyond the financial ability of many shipowners. In many cases container services are now operated by members of the old conference groupings finding a new consortium. Even so, the finance required is very great for not only has a specialized ship(s) to be built but at least three sets of containers. with regard to the latter, ownership has tended to be held by container hire operators, by industrial companies (who use containers not only to carry but to advertise their goods); and by the shipowning consortia. In all three sectors, however, there has been a good deal of leasing of containers with the operational control resting with the lessors. The expense does not end here for at the chosen terminals the authority has to bear the cost of providing specialized cranes, trailers, van carriers etc, as well as strengthening quays and creating stacking space.

(b) Not all merchandise can be conveniently containeri-



zed. The percentage of such traffic falls annually as new types of containers are introduced. Nevertheless, it is a constraining factor and can involve the shipper in capital outlay to adapt his production process/premisses/packing etc , to suit the restrictive dimensions/weights imposed by the container.

- (c) The container in itself is a high capacity carrying unit, and in consequence, exporters with limited trade are unable to fill the container to capacity, and thereby take full advantage of an economical through-rate, for example from exporters' factory premises to importers' warehouses. This situation has been largely overcome by the provision of container bases situated in industrial areas or port environs, where less than container load traffic (LCL) is stowed (stuffed) into a container with other compatible traffic of similar destination / area.
- (d) There can be a significant time lag between the introduction of the first specialized vessel and the implementation of a full container service. Many problems have to be overcome from the adaption or replacement of existing port facilities to the training of dock labour in the new skills needed. Such a changeover could require the continued use of conventional ships during the interim period in order to prevent the building up of the cargo back-log which could possibly embarrass the new service. Mention should be made here of the great work of co-operation between shippers , shipowners and port authorities during the establishment of container

services to Australia. There is no doubt that the lessons learned there will help in the avoidance of problems when other services come to be set up.

- (e) In some trades a very, very small percentage of the traffic is incapable of being containerized due to its nature such as certain livestock. This does involve the shipowner in providing specialized-non-container-facilities on the vessel which inflates the capital cost of the project, and sometimes results in poor utilization of such facilities on the return passage.
- (f) The stratification of some trades varies considerably by time of year and direction. For example a trade may have a preponderance of perishable cargo in one direction eight months of the year, whilst in the reverse direction the cargo may be consumer goods. This situation has to be reconciled in an acceptable container type(s) for use in both directions. Another example is to have cargo in one direction with a low stowage factor, whilst in the reverse direction it is a high stowage factor. Such problems although prima facie difficult, have been overcome by the co-operation of all interested parties, particularly shippers/ shipowners. Technological development in recent years such as food storage/processing etc. have eased the shipowners' problems considerably and tended to level out the hitherto, peak seasonal nature of the traffic in some trades.
- (g) Collapsible containers on a very, very limited scale for certain types, particularly the enclosed box

type, have been introduced in some trades especially where an imbalance of trade is experienced, i.e. more imports than exports. they have met with limited success and are unlikely to be adopted on a wide scale internationally. Initial and maintenance cost of such containers tend to be much higher.

- (h) The container owning company, which may be the consortia of shipowners, or container operator has a complex task in ensuring full utilization of such equipment. Some shipowners consortia have computer equipment to monitor and control their inventory of containers. The task is an international one and involves many parties to ensure strict control of the container when it is in their hands. Some method of container control is essential to ensure good utilization of equipment in the interest of maximizing revenue.
- (i) In some countries restrictions exist regarding the internal movement, particularly by road, of certain containers exceeding a certain dimension/weight. This has tended to restrict the full development of the larger container, particularly the 40 (12.20 m) footer, but in the long term the constraint is likely to disappear. Restrictions by canal/rail are virtually non-existent in many countries.

### *6.3 The Advantages and Disadvantages of Containerisation in Indonesia.*

---

The advantages of containerisation in Indonesia have

been realised in the following observations :

1. The introduction of containerisation in the port of Tanjung Priok has enabled the port to provide better services and has increased the port cargo handling capacity substantially. This has resulted in the elimination of severe bunching and congestion of ships which existed in the past.
2. Ships' waiting time has been reduced and the turn-round is now much faster.
3. Safety of goods is now improved by the reduction of pilferage and damage synonymous to break bulk cargoes.
4. The container system has been a major factor which has led the Government to rectify customs formalities, documentation and legal procedures concerning the movement of goods to and from the country.
5. The high technology associated with the container system has been partly achieved on the operational side.
6. Containerisation is likely to stimulate the growth of industrialisation throughout the country and could lead to influence the development of the other sectors, which could open new spheres of allied industries.

Besides the advantages there are also some disadvantages of containerisation, as Alan E. Branch explained above, which apply equally to Indonesia but are made worse by

the fact that Indonesia is a developing country. Listed below are the major disadvantages experienced by Indonesia as she entered into the containerisation mode of transport :

1. Containerisation is a capital intensive project and as such is beyond the financial ability of the Indonesian state owned shipping company. In many cases container services are now operated by members of the old conference groupings finding a new consortium. The money required is very great for not only specialized ship(s) are to be built but at least 3 types of containers are also being used. The container ship tends to be in the hands of container hire operators in the industrial Developed Countries (who use containers not only to carry, but also to advertise their goods ), and by the shipowning consortia. Since Indonesia has not entered into the container owning trade she has to lease containers for her trade with the operational control resting with the lessors. Indonesia has also borne the cost of improving her chosen terminals by providing specialised cranes, trailers, van carriers, etcetera, as well as quays and creating stacking spaces.
2. Not all merchandise imported and exported by Indonesia can be conveniently containerized. the percentage of such traffic falls annually as new types of containers are introduced, this is a constraining factor which involves the Indonesian shippers in a heavy capital outlay to adapt their production processes/premises/packing etcetera , to suit the restrictive dimension/weights imposed by container specifications.

3. Indonesia is experiencing a time lag between the introduction of specialized container vessels still being used for carrying some of the container trade. Many problems are also to be overcome by the adaptation of existing port facilities and the training of dock labour in the new skills needed.
4. The insufficient volume of containerizable trade has caused many containers to be sent away empty. This is a serious problem in Indonesia, caused by a large imbalance in traffic flows clearly demonstrated by Tanjung Priok's throughput figures. These reveal that although 100% of all imported containers are full, only around 35% of export boxes are loaded.<sup>3)</sup>
5. Another disadvantage of containerisation in Indonesia is one of socio-economics. Indonesia being a developing country is endowed with a large human resource which needs employment. As containerisation is a capital intensive industry it does not require a large labour force and this creates unemployment in Indonesia. This problem will probably be overcome when Indonesia has developed other industries allied to containerisation.

*Footnotes*

---

1. *Alan E. Branch, Element of Shipping, Fifth Edition, London New York, 1981, pp 327 and 328.*
2. *Ibid, pp 329 and 330.*
3. *Stephen J. Matthews, Indonesia Opens its gateways to attract box traffic, Containerisation International, November, 1985, p. 74.*

## CHAPTER VII

### CONCLUSION AND RECOMMENDATIONS

Indonesia is the largest archipelago in the world. It consists of 13,677 islands. It lies between two continents, Asia and Australia and two oceans, the Indian Ocean and Pacific Ocean making it an important junction for international sea traffic. Shipping is therefore a basic factor in the country's process of achieving a satisfactory level of development, at present being given due consideration, so that its contribution to the national economy will improve in favour of the national balance of payments thus relieving it from the burdens of the increasing costs of maritime services rendered by this vital industry to the country. In this regard ports are playing a great role as links in the chain of sea trade. Great costs are incurred by shipping in ports and Indonesian ports are no exception to this rule. Cost related to ports such as storage cost, cargo handling charges, berthing cost, pilotage cost, towage cost, delays caused by complicated port procedures and also costs for other services to ships, are a significant elements which influence freight rates originating from those particular ports. The development of containerisation in line with the improvement of port management in Indonesia is aimed at providing better services to port users. It is obvious nowadays that any country aiming at developing its seaborne trade has to achieve such through containerisation.

Containerisation in general results in cutting down costs in ports by reducing dependence on extensive use of



manpower for handling, which is mainly done by sophisticated machines at faster speeds with greater safety and higher efficiency. In addition it offers all the advantages of unitization of cargo, saves on packaging costs and increases the utilization of berths. By reducing delays of ships in port, containerisation yields considerable savings for shipping lines in those areas where the operating costs of ships are very high. For Indonesia, this concept has to be fully adapted in the various aspects of seaborne trade and shipping including ports.

Development of container facilities in Indonesian ports is now based on stipulations proposed to exert greater control over imports and exports. These stipulations indicated that all dry cargo exports should be shipped through four gateway ports namely, Tanjung Priok, Surabaya, Belawan and Ujung Pandang. However it should also be stated here, that development should reach out to encompass other ports especially the interisland ports and trade as well.

Containerisation plays a big role in the development of Indonesian joint venture industries which still need industrial components from the developed countries such as machineries and other components/spare parts for the aircraft industry, shipbuilding industries, electronic industries (TV, radio, refrigerators etc.), car industries, chemical industries and so on, that are mostly carried by containers. It is greatly regreted that the major number of these industries are for the domestic consumption. This means that developing containerization for the export leg plays an important role in Indonesian economic development. Greater attention should be given to expanding potentialities of national export industries and trade which will result in helping to level up the imbalance of national foreign

trade.

Container handling in Indonesia and particularly in Tanjung Priok is showing a steady increase. In 1973, when containerization was introduced only about 3,000 TEUs were handled. This had increased to 7,700 by 1974 and reached 87,110 and 221,011 TEUs in 1980 and 1985 respectively.

Likewise, the total container through-put in the three main ports of Indonesia, Tanjung Priok (Jakarta), Surabaya and Belawan, has also increased from 138,102 TEUs in 1981 up to 211,207 TEUs in 1984 as shown in table 7.1.

From these figures it can be seen that containerization development in Indonesia is encouraging. Nevertheless it does not mean that there is no problem at all. The existing serious problem, as mentioned before, is summarized in the insufficient volume of containerizable export cargo that makes it unavoidable to load containers empty. Figures of exported loaded containers during the last few years does not look too encouraging. Compared to the number of full imported containers, only approximately 35% of the exported boxes are loaded nowadays (1985).

In order to overcome, or at least to reduce the amount of containers to be sent away empty, several methods, as listed below, are recommended :

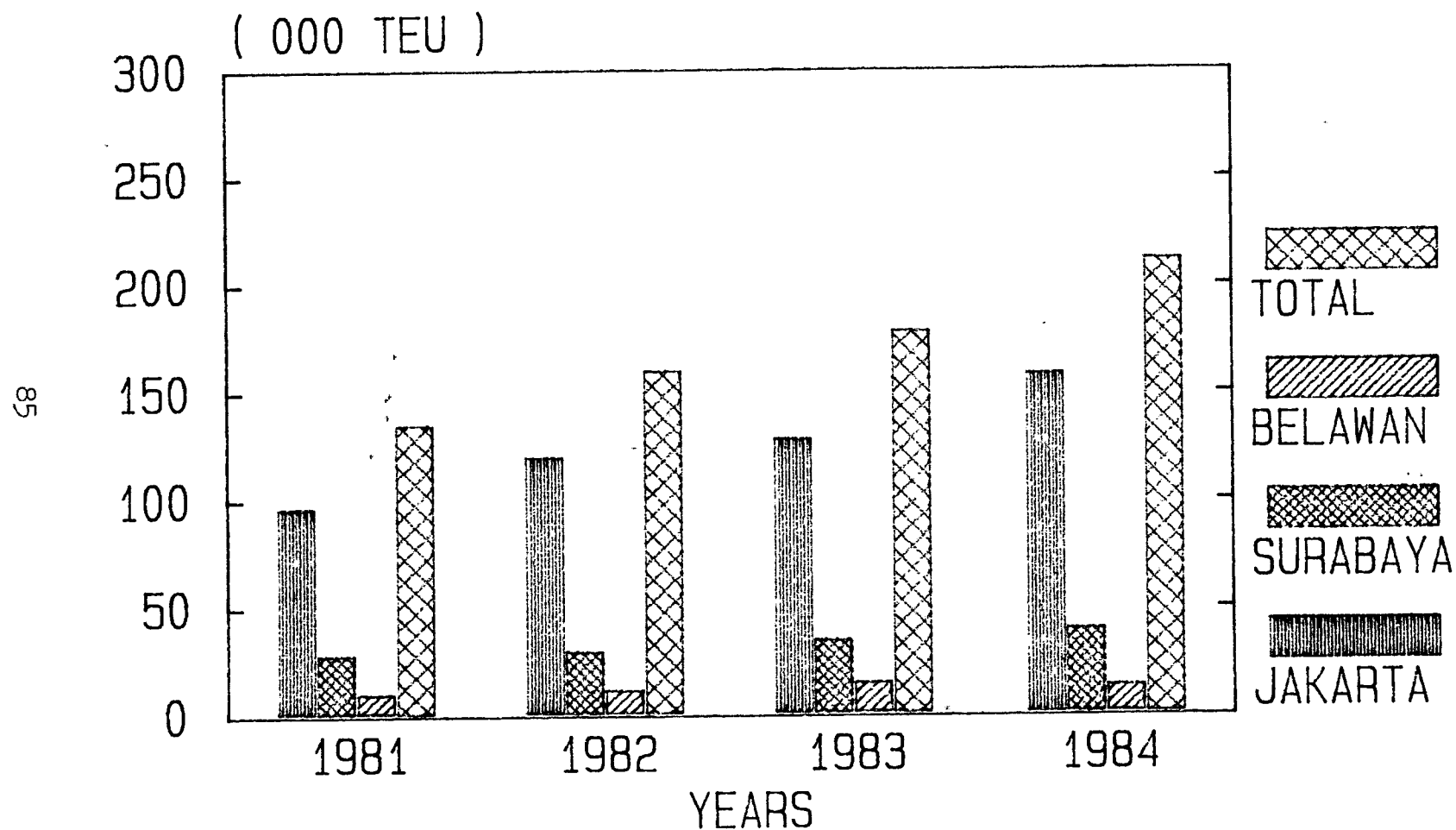
1. Encourage the containerising of agricultural products as export commodities especially rubber, oilpalm, tobacco and coffee. The plantations should be improved in two aspects, intensification and extensification especially in Sumatra where there is enough space/land, and intensification in

Java.

2. To improve the export of finished products in containers such as furniture and garments and also the semi-finished products like timber, tin, and rotan with consideration that to do this there is no need for capital intensive investments and that the labour costs are relatively low.
3. The Government should take sufficient legal and administrative measures to encourage agricultural and industrial products to be containerized to attain a balance of trade.
4. The Government can also encourage the export trade whereby there are :
  - a). Lower handling rates for the export of full containers.
  - b). Minimum tariffs for handling the export of empty containers.
  - c). Increasing storage tariffs for empty containers.

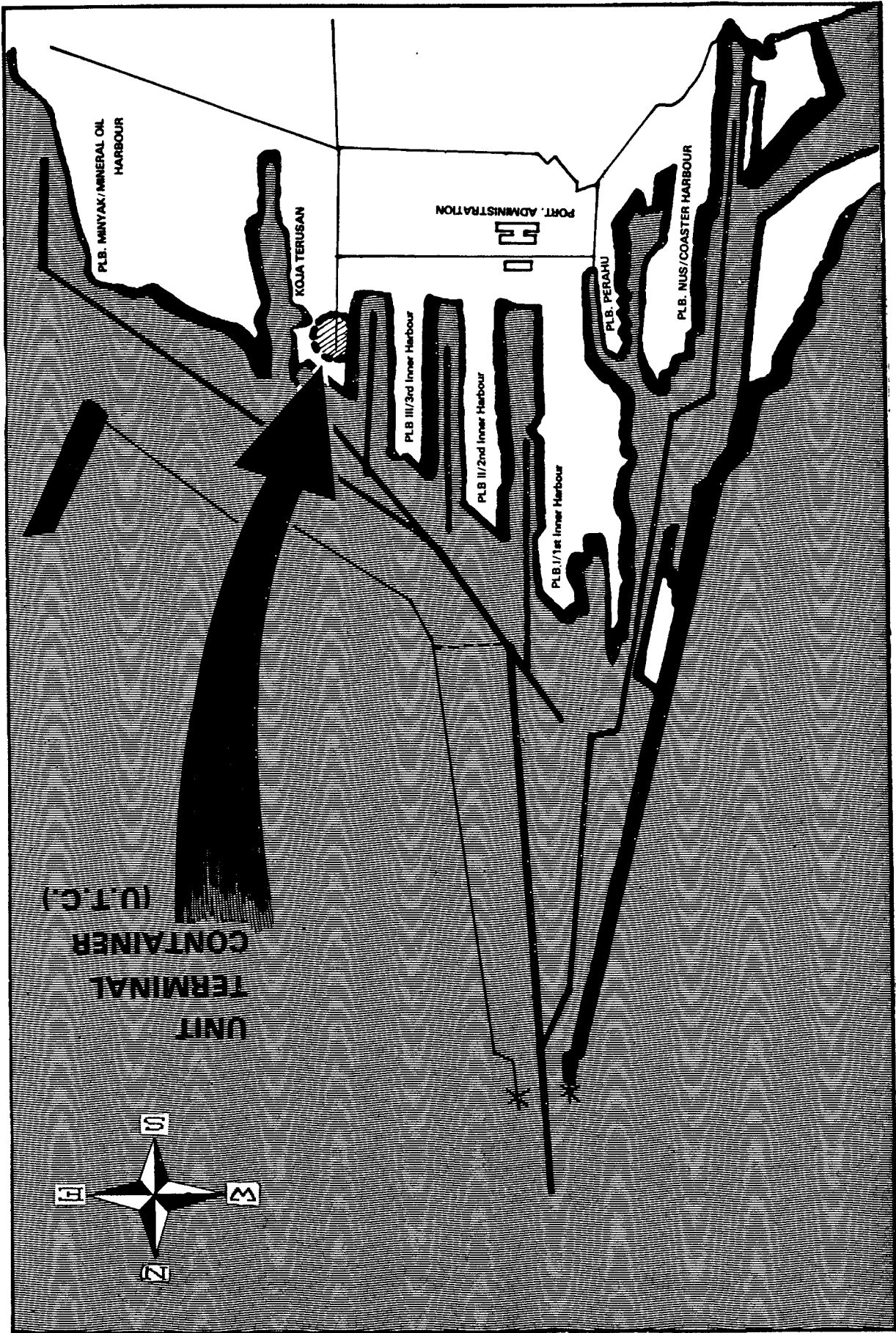
Point 1 and 2 mentioned above could also create new jobs for people which means more containerisation involved providing more jobs for the development of the national economy exceeding the degree created by the other modes of transport.

# CONTAINER THROUGHPUT AT INDONESIA'S MAIN PORTS IN 1981-1984

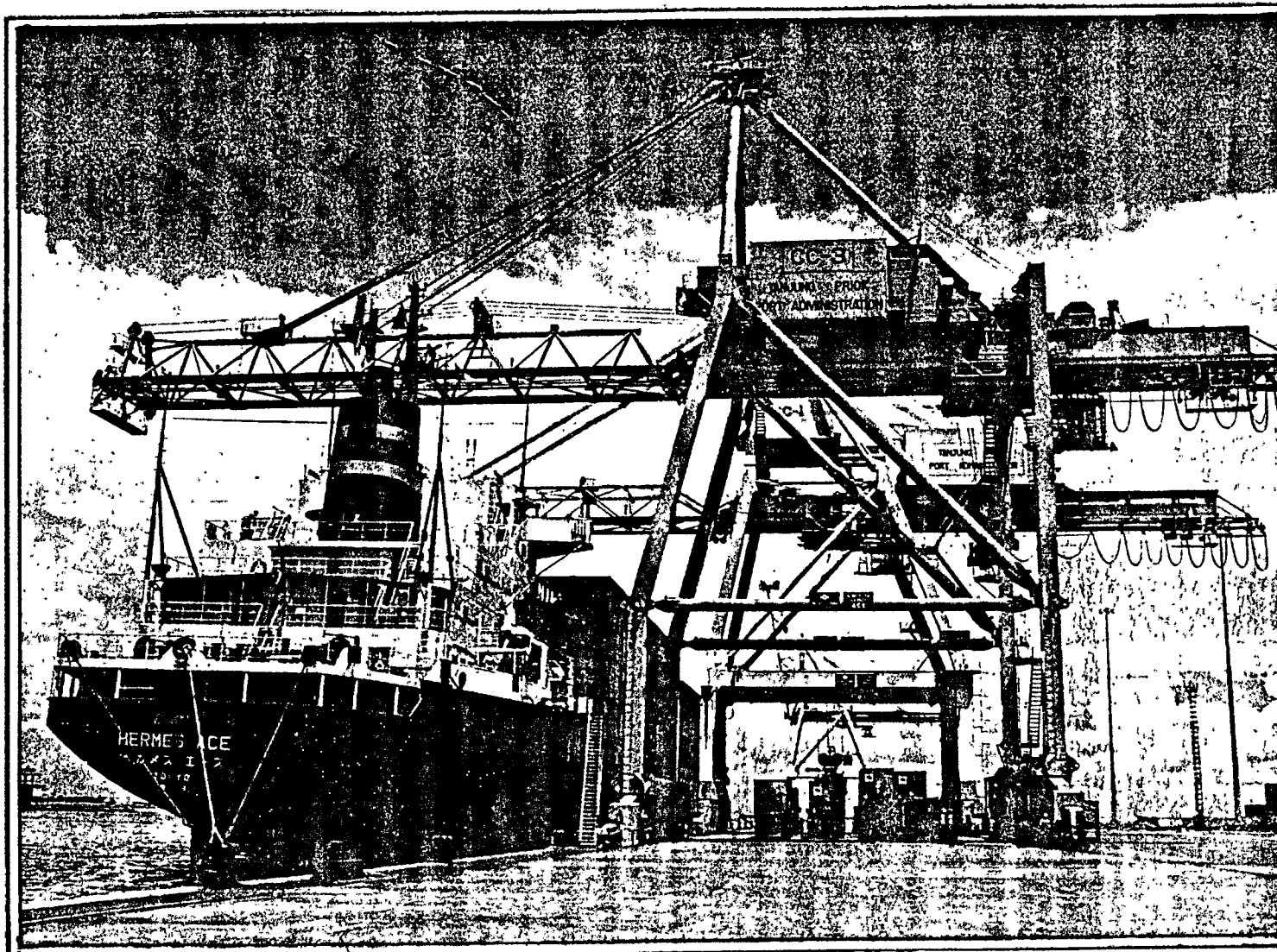


SOURCE: CONTAINERISATION INTERNATN'L

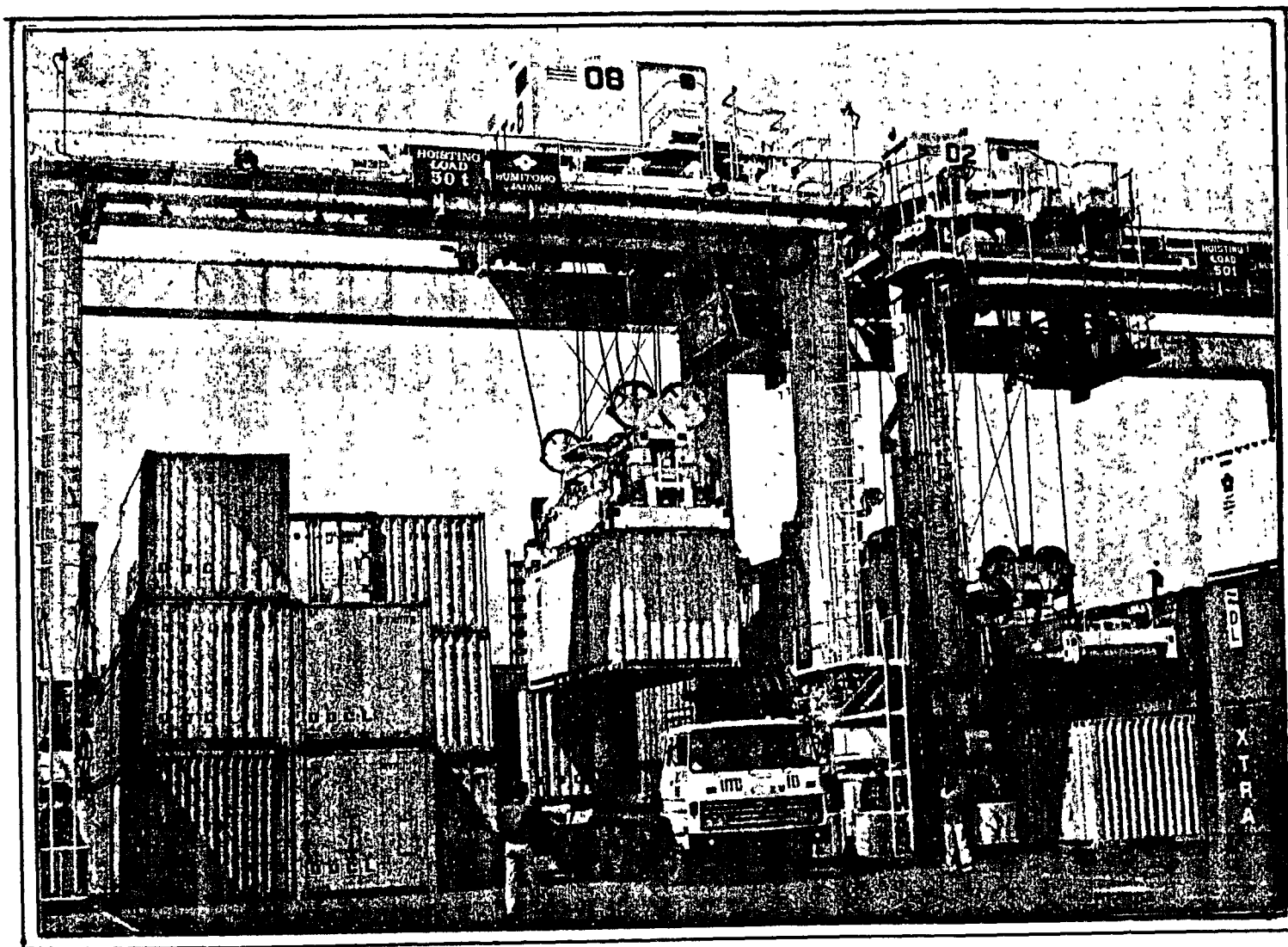
PORT OF TANJUNG PRIOK



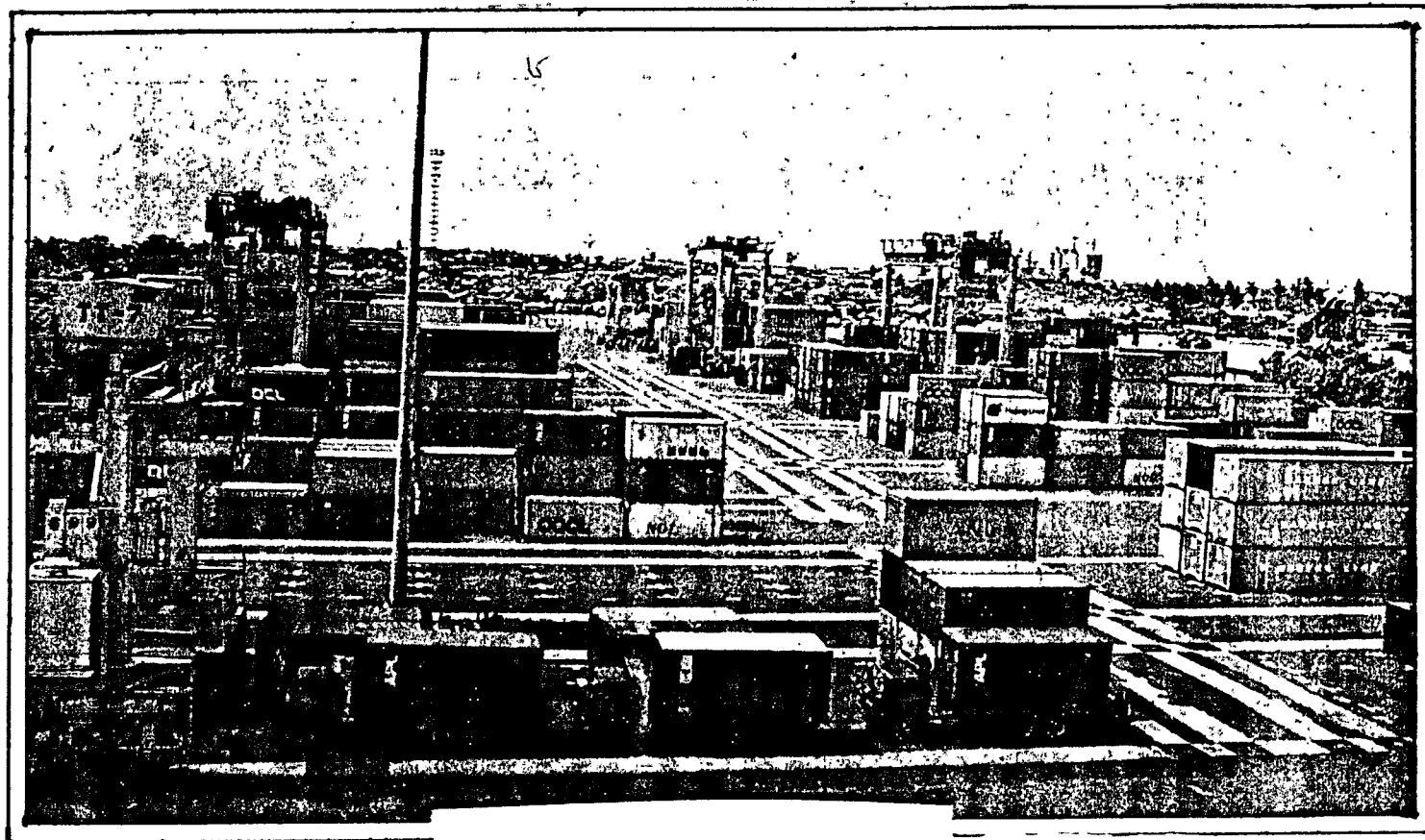
Container Terminal Unit at Tanjung Priok  
Container Handling Facilities (Container Gantry Cranes)



Container Terminal Unit at Tanjung Priok  
Container Handling Facilities (Yard Stacking Facilities/Transtainers)



Container Terminal Unit at Tanjung Priok  
Container Facilities ( Yard Stacking Areas )





## BIBLIOGRAPHY

1. Branch, Alan E. *Element of Shipping. Fifth Edition*, London New York: 1981
2. Beth, H.L, Dr., *Director Institute of Shipping Economics. Container Market Ownership*. Bremen.
3. *Brochure, Sea Land Industries Investmen.*
4. Gilman, S., Editor. *Container Logistics and Terminal designed. The University of Liverpool Marine Transport Centre, September 1981.*
5. Graham, M.G. and Huges, D.O. *Containerisation in the Eighties. Lloyd's of London Press LTD, 1985.*
6. Goss Leonard J. *Conainership Demand in the Eighties. ghties. CSR Consultant LTD.*
7. Huntly, Jack and Agnew, John. *Container Stowage A Practical Approach. And Brochure EAC.*
8. Immer, John R. *Cargo Handling. Washington.*
9. Matthews, Stephen J. *A Breakthrough for Shipping as Indonesians Relax Regulations. Containe-  
risation International, August 1985.*

10. *Matthews, Stephen J. Indonesia Opens its Gateways to Attract Box Traffic. Containerisation International, November 1985.*
11. *News week, January 28, 1985.*
12. *Tanjung Priok Port Administration. Jakarta: Brochure 1984 and 1985.*
13. *United Nations Conference on Trade and Development (UNCTAD) and Antwerp Port engineering and Consulting (APEC). Seminar on Container Management. Antwerp Belgium: 19 September-7 October 1983, August 1985.*
14. *United Nations Conference on Trade and Development. Port Development A Hand Book for Planners in Developing Countries. Second Edition Revised and Expanded, New York: United Nations 1985.*
15. *Van Den Burg, G. Containerisation and Other Unit Transport. London: Hutchinson Benham, 1975.*
16. *Van Den Burg, G. Containerisation A Modern Transport System.*
17. *Whittaker, J R; AICS. Containerisation. Second Edition, Washington London: Hemisphere Publishing Corporation, 1975.*

-----